State and Federal Aid for Blueprinting

Financial Assistance for Municipalities and Counties

AN unfortunate misconception of the difference between comprehensive community planning and public works planning still persists in many parts of the country. It is fostered to some extent by the fact that "post-war planning" is an effective slogan around which can be rallied substantial public support. When Congressional hearings are held on federal aid to local planning, or when states and cities appropriate funds for post-war planning, almost generally what is meant is the provision of money for the preparation of plans and specifications—blueprints. They are not city or county planning, but project planning.

Many may agree that there is no time for comprehensive planning (there was more time a year ago), and that any plans for post-war public works are better than no plans. The point is debatable, depending on individual opinion of the extent and severity of post-war unemployment. It is becoming increasingly obvious, however, that outside financial assistance is imperative if there is to be widespread community planning and the preparation of plans and specifications for post-war public works.

The first state to provide financial assistance for local blueprinting was New York. Michigan, New Jersey, California, and Maryland all entered the field in 1944.

New York

The New York Act of 1942 created the Temporary State Commission for Post-War Public Works Planning and authorized the appropriation of $450,000 from the state's post-war planning and capital reserve fund for "the preparation of plans and specifications for state institutions, buildings, and incidental structures and other state projects to be constructed after the war, other than plans and specifications for railroad grade crossing eliminations, highways, parkways, and low-cost public housing projects otherwise provided for."

In 1943 the law was amended to appropriate $3,000,000 for a continuation of the program and for state grants to local planning on a matching basis. Not to exceed $100,000 may be applied to administrative expenses of the Commission. The state will pay one-half the cost of preparing preliminary plans, which sum is not to exceed one-half of 1 percent of the cost of construction for a local improvement proposed by a municipality, a school district, or a district corporation. The Commission and the State Superintendent of Public Works must approve the application for the grant.

When preliminary plans have been approved, the state may advance up to one-half the cost of detailed plans, provided that the sum, plus the grant for the preliminary plans, does not exceed 2 percent of the cost of construction.

Michigan

Following New York's lead, the Michigan legislature appropriated $5,000,000 this spring for local post-war public works planning. The fund is being allocated through the Michigan Planning Commission, which has prepared a special procedure manual. One million dollars of the fund is to be available to county road commissions.

Counties, cities, villages, townships, school districts, and county road commissions may make application for funds to defray one-half the cost of surveys, plans and specifications for the construction, addition, major repairs and operations of public buildings, highways and streets, and publicly-owned and operated facilities, utilities, and services. Payments of grants on any one project are generally made in one sum after approval of the planning documents by the State Planning Commission. Grants must be supplemented, as in New York, by equal amounts from the applicants.

The Michigan Planning Commission urges local governing bodies, with the assistance of their planning agencies, to evaluate all projects to give them preference on (1) the need for the improvement, (2) the community's ability to finance and support the improvement, and (3) the amount of employment provided.

California

California topped the list when a special session of the legislature in July approved appropriation bills for post-war planning and construction totaling $167,281,000. Of this amount $109,490,000 goes to the state post-war reserve for state project construction, and $25,000,000 to the state post-war reserve for flood control; $8,201,000 is for site acquisition, and $14,590,000 for public works plans and post-war planning. In addition, $80,000,000 will be available for the state's highway construction program.

The fund for state aid to local planning, under the new appropriations, totals about $10,000,000, about $7,000,000 of which will go for plans and specifications and $3,000,000 for the acquisition of sites. The fund will be administered by a review board consisting of the Director of Reconstruction and Reemployment, the Director of Finance, the Director of Public Works, and the Legislative Auditor. Administrative expenditures in connection with this fund must not exceed $125,000.

The California State Reconstruction and Reemployment Commission was given an additional $100,000 to expand its staff and to set up an extensive field service, with regional offices in Los Angeles and San Francisco.

Maryland and New Jersey

Maryland and New Jersey complete the list of state-aid programs for local post-war planning. In Maryland, the Commission on Post-War Reconstruction and Redevelopment has recommended to the Governor that the unexpended balance of the post-war construction fund be used to match local participation to the extent of one-half the cost of plan and specification preparation, which is not to exceed 5 percent of the total estimated cost of the project. It is estimated that something in excess of $1,000,000 is presently available.

New Jersey recently passed legislation creating a Department of Economic Development, through which will be allocated $50,000 for blueprints for state projects and $500,000 to counties, municipalities, and school districts for local purpose plans.

The law provides that allotments for local projects are not to exceed 50 percent of the cost of plans and specifications or 2 percent of the cost of a proposed project, whichever is less.

ARCH OF WELCOME
(See Rube Goldberg's suggestion on page 13)

"LET 'ER GO!"

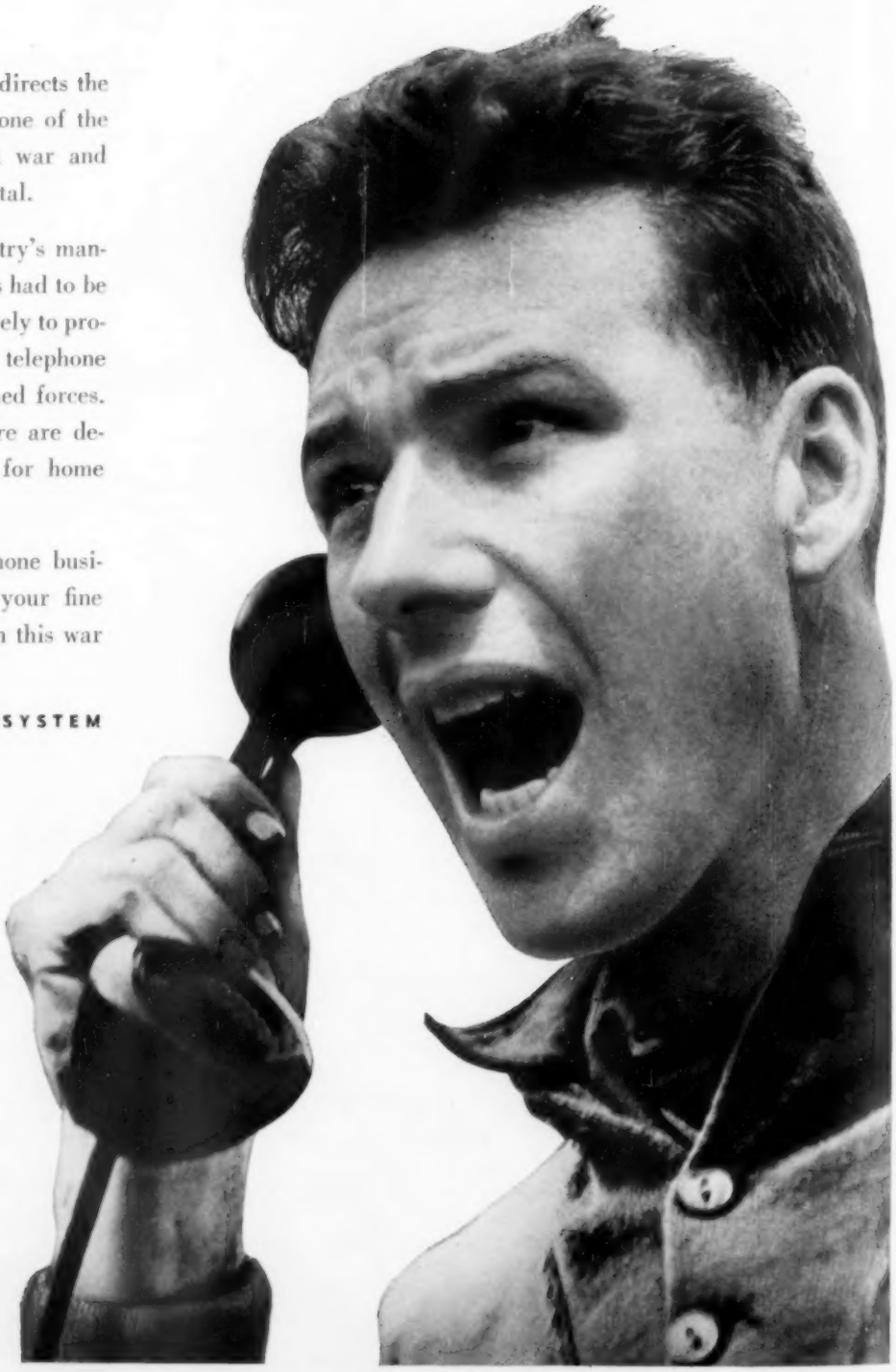
Over the telephone he directs the firing of big guns on one of the fronts. This is a vast war and communications are vital.

So the telephone industry's manufacturing capacity has had to be devoted almost exclusively to producing electronic and telephone equipment for our armed forces. That explains why there are delays in filling orders for home telephones.

All of us in the telephone business are grateful for your fine spirit of co-operation in this war emergency.

BELL TELEPHONE SYSTEM

Please try to keep the Long Distance circuits clear from 7 to 10 each night for the service men and women.



The big guns start booming when the section chief of a cannon company gives the order to "fire"

Our Municipal Notebook

"Grass Roots Branch of Democratic Government"

THE low down, the bedrock, and the underpinning of American government is municipal government, in which the authorities are not only elected by the people but are handy to them as well. The mayor, the councilmen, or city commissioners are just around the corner or on the next block from the citizens who are frequently their customers in the pivate business of making a living.

Just above the municipal basement rises the first story of American government. It is the county government—still close to the people, yet with a touch of remoteness or segregation. When the town plans to do something, it is likely to make a direct hit on the pockets of the citizens, by way of taxes, assessments, or added debt service. When the county plans to do something, while all its municipalities are involved, none feels a full responsibility. The county will provide it, the county ought to provide it, as if the county possessed some creative source of income.

Through the years, as distances shrink, the feeling has grown that counties are unnecessary, that no government is needed between the towns and the state, that the county is an anachronism.

At the second war conference of the National Association of County Officials, July 24-27, there was no recognition of obsolesence. The 400 officials meeting at the Syracuse (N. Y.) Hotel unfolded an impressive program of activities and interests. Far from feeling themselves to be the second tier of government, they say: "We are closest to the people, sometimes embarrassingly so."

Judge G. Clairborne Blanton of Selma, Ala., called the counties the "grass roots branch of democratic government."

Traffic Lacquer and Other Markings

"OUR Municipal Notebook," in the May 1944 issue of THE AMERICAN CITY MAGAZINE threw out a feeler relative to types of traffic markers now in use by cities, in the light of present day material shortages.

When we realize that traffic striping with lacquers or paints must be renewed at frequent intervals and that we are continually being called upon to add more and more markings, it is but natural that we should instinctively consider the possibility of some type of "permanent" marking. The city of Sacramento tried many of the materials mentioned in the article referred to above—steel, aluminum, rubber, compositions of various kinds. We have never attempted to construct pavement with built-in stripes or markings by using materials of contrasting colors.

We have discarded all except traffic lacquer. The prime reason for clinging to first principles is that practically all of our paved streets are paved with bituminous mixtures. This type of pavement has been adopted as standard for several reasons, chief of which is that it facilitates trenching for laying and repairing pipe lines and other utility conduits and the restoration of the pavement after trenches have been filled.

Over the years our clay subsoil tends toward uneven settlement and compaction, whether or not the original pavement has been disturbed, and occasionally it becomes necessary to smooth the pavement surface. This is done by means of a "heater-planer," and it is easily seen that this would be rather hard on buttons, markers, etc. of almost any material.

The only markers used are those which designate safety zones for streetcar patrons. These markers are of cast aluminum, the base being about 8x18 inches and overall height about 3 inches. They carry one 3-inch-diameter red reflector and 12 7/8-inch diameter clear reflectors, all directed toward approaching vehicular traffic.

Sacramento still relies on traffic lacquer applied in one or more of three ways; gravity-feed machine, spray machines, and hand-brushed method.

ED E. WELCH,
Citv Traffic Engineer,
Sacramento, Calif.

Utility and Garbage Fees

A "COMMODITY TAX" of 5 percent has been levied by Columbus, Ohio, on all charges for electrical energy, natural gas consumption, local telephone service, and water consumption. The tax appears as a separate item on each bill and is collected by the utilities from their consumers. The tax, which has been in effect for three months, is expected to bring in $725,000 in revenues by the end of the year, the Municipal Finance Officers Association reports.

In four months Miami, Florida, has collected $150,000 in garbage fees from 50,000 residents and expects to receive a total of $400,000 in 1944 from this revenue source. The service charge of $8 a year for two collections a week from two containers may be paid in one or two equal installments. A charge of 75 cents per year is made for each additional container, and establishments requiring more than semi-weekly collections pay 10 cents for each additional collection of garbage from each container.

Do You Know?

1. The total number of publicly owned and operated electric systems in the United States, as now reported by the Federal Power Commission, is 3,261.

2. That 80.3 percent of the population of the nation live in electrically-lighted homes.

3. That the average annual use of electricity per residential customer in the United States increased from 430 kwh in 1926 to 1,073 kwh in 1943.

4. In 1943 the residential consumers of the nation used an average of 1,073 kwh; Tupelo, Miss., used 1,833 kwh; Chattanooga, Tenn., 2,347 kwh; Murfreesboro, Tenn., 2,349 kwh; Seattle, Wash., 2,867 kwh; your home town used ? kwh.

5. Paul J. Raver, Booneville Administrator, testified in September 1943 that the cost of financing private power lines and equipment was 12 percent, as compared to 7 percent or 8 percent for public power lines.

6. The net earnings of America's largest municipal lighting system at Los Angeles for the year ending June 30, 1943 were $12,969,003.

R. E. MCDONNELL
Burns & McDonnell Engineering Co.
Kansas City, Mo.

Delineators for Street Highways

A NUMBER of city officials have requested information on street and highway delineators which are used to furnish vehicle guidance at night along unlighted roadways. Signal Service Corporation, Irvington, N. J., states that two types of delineators are available. These are the mono-directional type which is available with post, and also bi-directional heads which can be mounted on 2 x 4 posts obtained locally. Prompt shipment on receipt of highest available priority.

a Sure Sign of Progress

HORTON Elevated Storage

The presence of elevated storage tanks in a municipal water supply system indicates progressiveness and farsightedness on the part of the engineers and municipal officials who recommended them. *All* of the advantages of elevated water storage are not necessarily felt immediately after the structures are erected. One of the outstanding advantages of elevated storage is its ability to satisfactorily handle *future* water requirements due to increasing or shifting populations and expanding industrial needs. This is being demonstrated daily under today's conditions.

Among the *immediate* benefits that Horton elevated storage tanks offer municipalities are: a maintenance of an ample reserve of water available for fire protection; an adequate reserve in case of power failure and provision for pumping during off-peak periods.

We shall be glad to submit, without obligation, complete information or estimating data on Horton elevated tanks to meet your requirements. Address our nearest office.

INSTALLATION DATA REGARDING THE HORTON ELEVATED TANK SHOWN ABOVE . . .

Location: *Wilson, North Carolina*
Capacity of elevated tanks: 1,000,000 *gals.*
Height to bottom: 100 *ft.*
Area served: *Entire city (domestic and industrial)*
Population: *About* 18,000
Distribution mains in system: 25 *mi.*
Size of mains: 2, 4 ,6, 8, 10, 12 *and* 14 *in.*
Transmission mains in system: 3 *mi.*
Size of mains: 14 *in.*
Amount of storage in reservoirs: 2,000,000 *gals.*
Pressure in distribution system: *Constant*

CHICAGO BRIDGE & IRON COMPANY

Birmingham 1.....1502 North Fiftieth Street
Houston 1.....5601 Clinton Drive
Tulsa 3.....1625 Hunt Building
New York 6....3308—165 Broadway Building
Cleveland 15.....2236 Guildhall Building

Chicago 4.....2127 McCormick Building
San Francisco 8.....1033 Rialto Building
Philadelphia 3.1616-1700 Walnut St. Building
Havana.....402 Edificio Abreu
Washington 5.....330 Bowen Building

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PENNSYLVANIA

Water Works

Making Meter Rates Modern

IF YOU are looking for ways to modernize your water rates here are the principles that you should follow, set out by Charles H. Capen, Chief Engineer of the North Jersey District Water Supply Commission, Wanaque, N. J., in a paper delivered recently before the annual meeting of the American Water Works Association held in Milwaukee.

1. Calculate carefully the cost of water delivered to the municipal limits or at the end of the transmission lines, i.e., beginning of your distribution systems.

2. Base your minimum industrial rates on this wholesale cost plus a small transportation charge for carrying water through the distribution system. Most industrial rates should lie between one-third and one-fourth of the domestic rate.

3. Derive your fire protection costs on an inch foot basis of pipe in the distribution system instead of charging so much per hydrant.

4. Examine your domestic rates to insure that they are carrying a full share of the hidden costs that are too frequently omitted.

5. Charge for all water used. Don't burden your water works with innumerable free water millstones. A water department should charge for water used even by the municipal departments and in turn should reimburse the municipality for all items such as rent, legal, and other administrative costs.

Every water works man knows that a change in rates is apt to bring protests; however, he would welcome a chance to remove the "barnacles" from his rate schedule and put it on reasonable paying basis, according to Mr. Capen.

How to Make a Fire-Flow Test

HERE is the way to examine your water distribution system to determine how adequate it is for fire fighting purposes. This method was outlined by George H. Booth, Chief Engineer of the National Board of Fire Underwriters, New York City, in a paper delivered before the annual meeting of the American Water Works Association held in Milwaukee, June 13 to 16 of this year.

First—Select a group of 4 to 6 hydrants along the larger mains of your distribution system.

Second—Pick a central hydrant preferably taking its supply directly from one of the larger mains in order to indicate the average static pressure in this group.

Third—Remove one of the outlet caps from this hydrant and replace it with a special cap bored to permit the attachment of a 200-pound gauge.

Fourth—Open the hydrant and record the static pressure before and during the flowing test.

Fifth—Assign an observer to each of the other hydrants in the group. Each observer opens his hydrant after removing one or more of the caps, and measures the velocity of discharge using a pilot tube and a 50-pound gauge. To make this measurement, open either two of the 2½-inch outlets or one large outlet. Limit the discharge from any individual hydrant to a maximum of about 1,000 gpm. At less strong points it may be necessary to open one small outlet on each hydrant.

By running the fire-flow tests on hydrants surrounding any important industrial plant or warehouse, one can determine the capacity of the distribution system in these key points. Mr. Booth also recommended running similar tests in typical residential areas, determining from these tests whether it is necessary to install an additional supply line, to extend arteries, or otherwise to strengthen the distribution system.

By following this system, Mr. Booth points out, it is possible for any water department to conduct a survey of its system determining the capacity at any particular point without any other instruments than four or five good gauges. The National Board of Fire Underwriters has a pamphlet, distributed without cost, which contains a table showing discharge from various sizes of hydrant outlets using the coefficient of 0.90.

Ejecting the Mud Balls

ARE you having trouble with mud balls in your sand filters? A. A. Bailey, Filtration Engineer for the Montebello Filtration plant, Baltimore, Md., speaking before the Maryland-Delaware Water and Sewerage Conference recently stated that he formerly had been plagued with this trouble and that this was the way he eliminated it:

Briefly, his difficulty was that his washing equipment did not thoroughly remove all the mud balls. After the sand had been completely washed, returned to the filter, and back-washed, there would still remain in the top several inches of sand innumerable mud balls approximately the size of peas. So instead of using only one ejector, Engineer Bailey decided to run the sand through two, and found that the mud balls could be removed completely.

However, to do this, he had to make a few revisions to the second ejector to equip it to handle the combined output of the first ejector plus its own water. These revisions consisted of an extra section welded on the top of the ejector hopper. One side of this extension was built two inches lower than the other three and was equipped with an overflow trough with a downspout carrying the overflow waste to a wash trough. This overflow made it possible to carry away the mud balls that were causing the trouble.

A certain amount of trouble was experienced at first with air drawn into the hopper of the first ejector, Mr. Bailey reports. This caused a great amount of boiling and spattering in the second hopper. This was, however, overcome by hanging a series of baffles in the second hopper to control this action.

This is Engineer Bailey's "secondary" sand ejector in action with its built-up section welded to the hopper. Mud balls pass out by the overflow trough and are discharged into the filter wash-water trough.

Sanitation Standards Demand

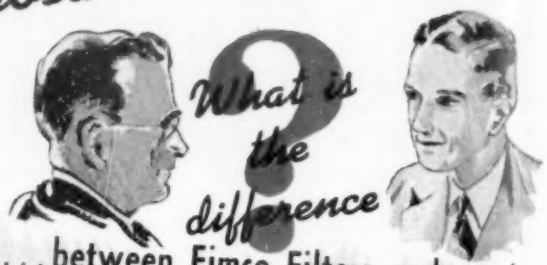
Modern Sewage Disposal Methods

Sewage Filtration is an important step in the process of municipal Sanitation. Sewage disposal plants must be designed and engineered by experts. Choice of equipment must be based on many factors.

What are the local conditions? How much floor space is available? How should equipment be arranged for maximum efficiency and upkeep? How about future expansion?

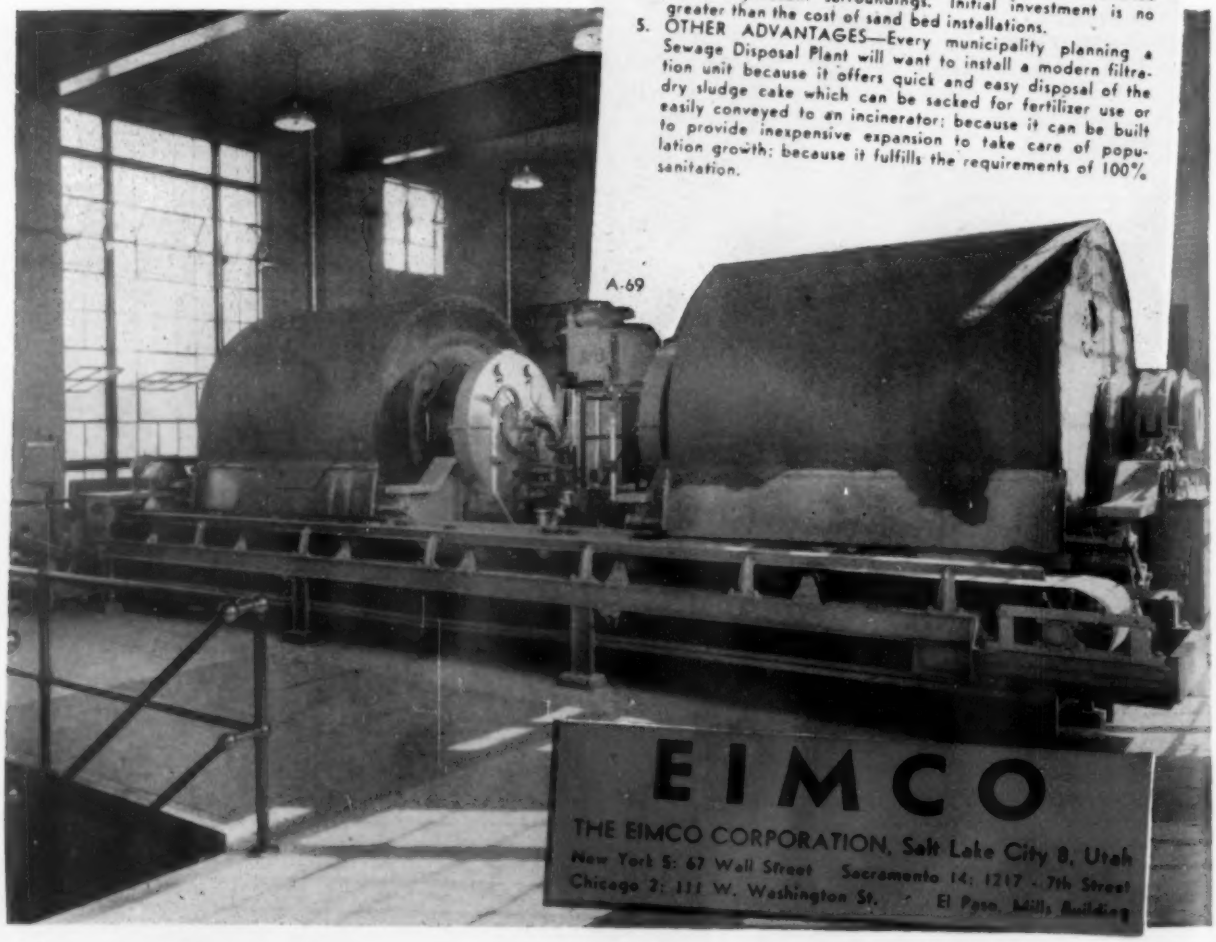
Long established supremacy in the Sewage field is due primarily to Eimco's careful investigation of local conditions so that all equipment is custom built to predetermined specifications.

Eimco Engineers welcome an opportunity to aid in planning post-war sewage treatment plants. Why not call on them for assistance now?



. . . between Eimco Filters and sand beds in drying sewage sludge?

1. CONSERVE SPACE—A modern Eimco filter station will dry a comparable amount of sewage sludge in one three hundredth of the area needed for a sand bed!
2. EFFICIENCY—Sand bed drying of sewage sludge is erratic, depends on weather conditions; rains and frosts slow down process, hinder sludge removal. Modern Eimco Filters operate continuously in all kinds of weather under shelter.
3. SANITATION—Open sand beds on which sludge is spread for drying give off unpleasant odors, attract flies and insects whereas Eimco Filters dry sludge without any of these disadvantages.
4. OPERATING COSTS—Cleaning sand beds of sewage sludge is an unpleasant job requiring many laborers for long periods of time whereas an Eimco filter station is operated by one man who has ample time for maintenance work in pleasant surroundings. Initial investment is no greater than the cost of sand bed installations.
5. OTHER ADVANTAGES—Every municipality planning a Sewage Disposal Plant will want to install a modern filtration unit because it offers quick and easy disposal of the dry sludge cake which can be sacked for fertilizer use or easily conveyed to an incinerator; because it can be built to provide inexpensive expansion to take care of population growth; because it fulfills the requirements of 100% sanitation.


A-69
EIMCO
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New York 5: 67 Wall Street
Sacramento 14: 1217 - 7th Street
Chicago 2: 111 W. Washington St.
El Paso, Mills Building

Big Spring, Texas, Sewage Plant

THE new Sewage Treatment Plant at Big Spring, Texas, is now 80 percent complete. The plant, which incorporates the Hays Process of Sewage Treatment, consists of a primary sedimentation between aeration stages, followed by a final sedimentation. Chlorination equipment will be installed to further treat the effluent. The plant will also have digestion chambers and sludge drying beds.

Advantages of Plant Records

IN his paper, "The Value of Good Plant Records," delivered at the Central States Sewage Works Association meeting at Oshkosh, George F. Bernauer, Assistant Sanitary Engineer, Wisconsin State Board of Health, points out the need for adequate plant records in smaller communities. Record keeping stimulates interest on the part of the plant operator to maintain treatment efficiencies at the optimum. Making laboratory tests and keeping a record of results and operating data sustains the interest of the operator, giving him a starting point from which to do some constructive thinking regarding operation and maintenance.

Often adequate records of previous operations are of considerable assistance in designing additions to existing treatment plants. Plant records assist the operator in taking advantage of every possible means of getting the most out of the treatment facilities available, and in checking on many factors influencing plant efficiency.

City dads are, to a great extent, business and professional men and they realize the value of maintaining a good set of books which, in most cases, gives them a better understanding of the needs of the plant.

The value of satisfactory records of sewage plant performance is extremely great when questions arise as to possible damages caused by plant effluents. Regular determinations of BOD solids and dissolved oxygen on the effluent and on the receiving stream will be of considerable assistance in establishing the fact that the municipality was not contributing to nuisances and damage resulting from stream pollution.

Another debatable question which can be answered many times by adequate records is the effect of industrial wastes on treatment plant operation and efficiency.

Plant operation reports should be considered as adding to the total available knowledge concerning the art of sewage treatment. Operating experiences, as recorded, may serve as a guide to other communities which are contemplating sewage works construction or are seeking assistance in problems arising at their treatment plants.

Operators should not become discouraged if maintenance of operating reports seems to bring little return. It is never known when an emergency will arise which will demand all of the data possible on the operation of the plant. It is better to have satisfactory information available and not use it than to need the information and not have it on hand.

P. H. S. Pollution Control Bill

H. R. 4741, a bill to provide annually a sum of $50,000,000 for federal grants-in-aid and loans for the construction of sewage treatment works, and to give financial aid for engineering work connected with state pollution control, has been introduced in Congress.

The administration of this proposed program would be under the supervision of the sanitary engineering division of the U. S. Public Health Service and this division would receive advice and recommendations from such organizations as the Public Health Service, the Corps of Engineers, the U. S. Fish and Wild-life Service, and two non-governmental consultants.

The program provides that investigation of any stream in the nation be made at the request of the state health authority, and that recommendations for abatement of pollution be made by the Surgeon General.

Sunnyside, Wash., Adopts Ordinance

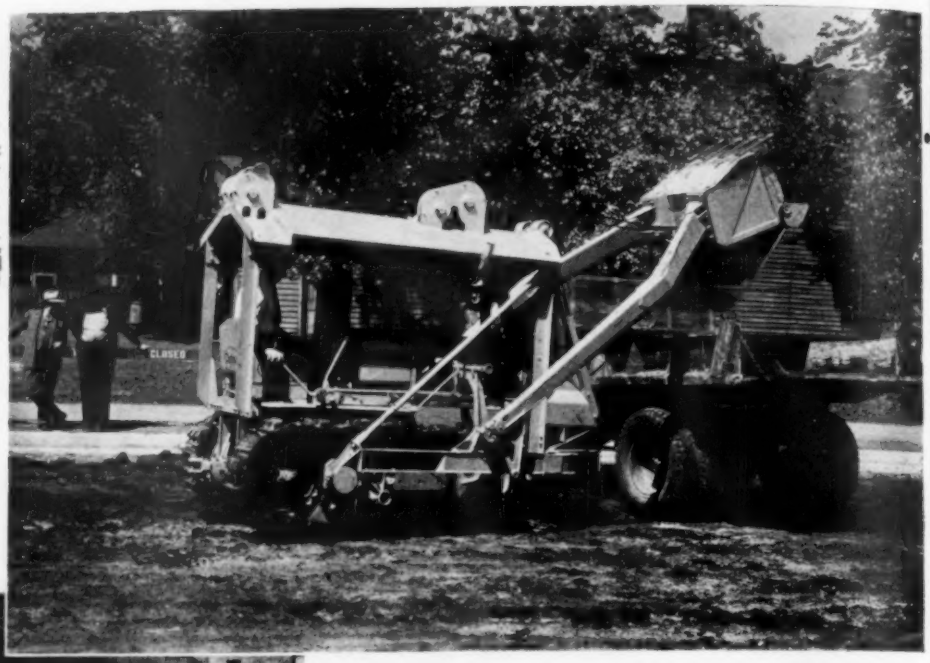
SUNNYSIDE, WASH., has adopted an ordinance fixing rates and charges for sewerage service and refuse collection, according to a report received from the International City Managers' Association. Money collected will go into a special fund to pay off $85,000 in bonds which will be sold to finance improvements of both services. The ordinance also provides that every building in the city must be connected with the city-owned sewerage system and must use the city's garbage collection service.

Moscow, Russia, has a modern activated sludge plant built 1917-1936.

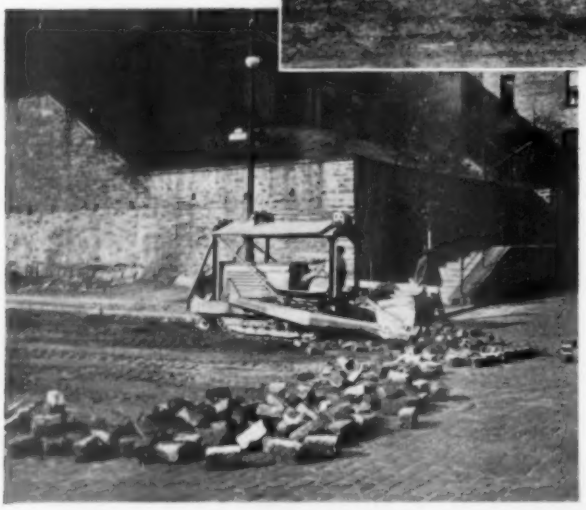
A Modern Sewage Treatment Plant

This very attractive sewage treatment plant at Austin, Texas, is one of an ever increasing number of plants being erected all over the country that are destroying the belief that sewage treatment plants are necessarily odorous and odious. Most of the more recent plants not only produce no offensive odors but are such outstanding examples of design as to attract the populace to the plant and thereby inform them of the value of sewage treatment.

THE SARGENT OVERHEAD IS WORTH PROCLAIMING FROM THE HILLTOPS!



The Sargent Overhead is ideal for street resurfacing; it digs up the old surface and loads in trucks in a STRAIGHT LINE ACTION. It does not interfere with one-way traffic.



BECAUSE the Sargent Overhead is the answer to many of your equipment problems . . .

It will do dozens of jobs in your city, town or state public works department . . .

And it will do the jobs quickly and economically . . .

It will load from your stock piles . . .

It will dig up and load street excavation . . .

It's a working fool as a bulldozer . . .

It's a fast, one-man snow loader . . .

It can be used as a crane . . .

There is no twisting and turning with the Sargent Overhead, as there is with other tractor loaders . . .

The motion is direct and simple . . .

There is no violent strain on the track assemblies . . .

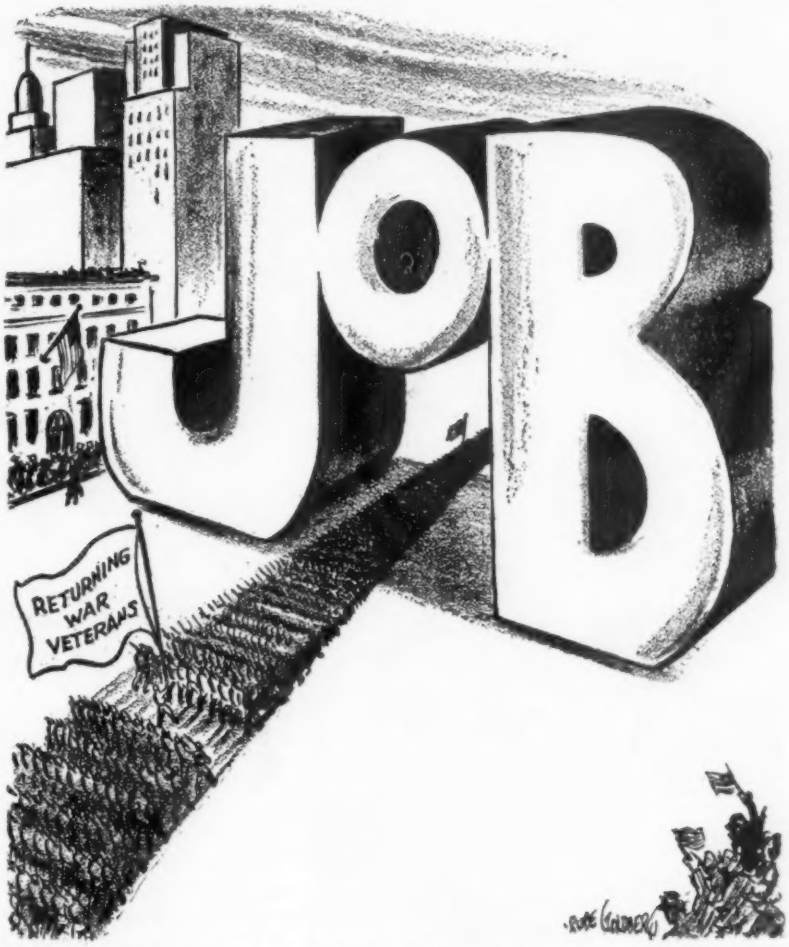
All these facts are worth proclaiming from the hilltops.

MAINE STEEL
INCORPORATED
SOUTH PORTLAND, MAINE

When Germany Surrenders

ARCH OF WELCOME *By Rube Goldberg*

Will your community be ready with ample employment, both in public works and in private industry, when the boys and girls come home?



Reproduced by permission from THE NEW YORK SUN *for August 23, 1944*

When Germany Surrenders, Must We Stage a Drunken Orgy?

REPORTS from various cities indicate that the fear of disorderly celebrations throughout the United States when Germany surrenders is so great that department stores, hotels, municipal police departments, and other business and civic agencies are wisely making plans for protection of life and property when the armistice is announced.

While wisdom dictates such precautions, it is to be hoped that in every community plans will also be made for the kind of observance that will do credit to a peace-loving democracy. The following suggestions are offered by William H. Allen, Director of the Institute for Public Service, of New York:

"How U. S. A. celebrates the coming armistice with Germany will tell the world—including the liberated nations, United Nations, beaten Germany and to-be-beaten Japan—how much or little we have grown because of our families'.. our country's and a world's sacrificing.

"New York City's hotels have anticipated our schools, colleges and churches in publicly urging that this next armistice celebration be not led by alcohol and a spirit of irresponsible destruction.

"Will not schools, colleges and churches—yes and service clubs, Stock exchanges, etc.—offer spiritual and patriotic alternatives or supplements to a pagan debauch where remembrance and understanding as well as tattered papers are thrown to the winds?

"If to the most extensively and expensively schooled people in the world the coming German armistice means only another day's freedom from school and accountability in order to join mobs, then our vaunted education is failing to fit us for self-government and prepare us against World War III."

HELP STOP THIS INVASION!

Take Up Arms AGAINST UNSIGHTLY, ANNOYING, DISEASE-BREEDING DUMPS!

Use The Clean, Landscaped Sanitary Fill ...The Drott Bull Clam Shovel Method!

Digs trenches into which all refuse is dumped, thoroughly compacted and covered with top soil every night. Result is a beautiful, landscaped lot that can be used for a park, playground or building site. No more foul odor or smoke . . . no more breeding place for annoying and disease-carrying pests . . . no more unsightly dumps that are a blot on your community!

It will pay you many times over, in every way, to investigate the Drott Bull Clam Shovel Method of Sanitary Fill.

GET THE COMPLETE STORY!
Send For This Book "Answer To Your Waste Disposal Problems . . . with the Drott Bull Clam Shovel."

FREE

DROTT BULL CLAM SHOVEL FITS ALL CURRENT MAKES AND MODELS OF CRAWLER-TYPE TRACTORS, from 30 to 130 h. p. Four sizes. 1 to 4 yd. capacities.

• • •

Operated By DROTT POSITIVE, CLOSED HYDRAULIC SYSTEM • SMOOTH • QUICK • DEPENDABLE • Keeps dirt and air out . . . keeps oil in! Used successfully on Drott equipment for many years.

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HI-WAY SERVICE CORPORATION

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739 Munsey Bldg.
WASHINGTON 4, D. C.

Public Safety

FM Radio Serves Cars for Fire, Police, Water, and County

IN May 1942 Wilmington, N. C., replaced its amplitude-modulation police-radio with a frequency-modulated system. Then, fire patrol cars, in addition to foot patrolmen, were dealing with the greatly increased police problems of this war-expanded city. With the FM system went car-to-car broadcasting to facilitate the speed with which one car could be brought to the aid of another or to the scene of a crime.

This system uses a 250-watt transmitter which is at *fire* headquarters and the control room is in the *police station*. This transmitter overcomes the unfavorable atmospheric conditions in this area. Receivers and transmitters are now installed in vehicles of the Fire, Police, and Water Departments, and the County. Connected to the system are the Fire Chief's car, and the city's fireboat which now the Chief can direct from the land. The water department's emergency truck which has a receiving set permitting emergencies to be handled expeditiously. Two of the county government's patrol car are equipped with receiving and transmitting sets but not with car-to-car transmitters. Broadcasts to these cars come from the city police-control room.

Today the city operates six police-patrol cars fully equipped with two-way, car-to-car sets with 25- and 30-watt transmitters. The installation of frequency modulation has greatly improved reception by eliminating static and machine interference. Greater coverage has been accomplished along with the elimination of dead spots and the prevention of a wavering transmitting signal which under the AM system caused broadcasts to rise and fall from time to time. Transmission from car-to-car has been successful over a range of 22 miles and from car-to-headquarters over 40 miles. There is now no interference from other stations and few receivers in the area can pick up Wilmington police calls, thus providing greater secrecy for important police messages. Finally, the parts of the frequency modulation system are smaller, requiring less space, maintenance, and expense.

This up-to-date equipment enables the Wilmington police department to derive the maximum use from its six patrol cars which adequately protect an area and population that would conceivably require more cars without such equipment. (Contact is maintained with foot patrolmen by means of police-telephone call-boxes).

When the system was installed in 1942 a receiver was furnished to the state highway police, operating under their amplitude-modulation system, so that the Wilmington police could establish unbroken communication with them. Similarly, the city police have an AM receiver at headquarters for the purpose of receiving broadcasts from the state police. Thus police officers of city, county, and state, are linked by radio facilities at the city's control room at police headquarters.

To date, $4,300 has been spent by the city on the installation of its frequency-modulation radio system, while the transmitter alone of the AM system, exclusive of the automobile receivers, cost $5,000. A full-time experienced radio engineer is employed by the police department to maintain the equipment in first-class condition.

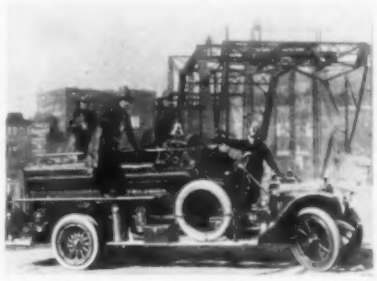
J. FRED RIPPY, JR.
Administrative Assistant
Wilmington, N. C.

Municipal Future For the Jeep?

THE "jeep" will be drafted by the American public after the war for a variety of civilian jobs, according to a survey made by Willys-Overland Motors, said President Ward M. Canaday to the Toledo Chamber of Commerce: "The majority of persons questioned visualized the jeep as a possible aid to them either in their work or in some type of civic or municipal project. A keen interest was expressed in the vehicle's possibilities as a fire fighter unit for small communities or as a supplemental unit in urban areas. It is being earmarked also for plowing snow, stringing telephone wires, sweeping streets and helping to build roads.

This jeep, manned by expert fire fighters, carries three 15-pound and one 75-pound Kidde units with long hose, big nozzle and auxiliary tools. Fire fighting will be only one of the many post-war uses of the jeep now anticipated.

Retired After a Third of a Century



This 1911 model White hose wagon was the first piece of motorized equipment of the Cleveland Fire Dept. After 33 years of service the truck is being retired. Although still in operating condition tires of required size are unavailable. The old White was a part of Hose Co. No. 1.

Fire Costs and Losses Up

INCREASES in municipal fire protection costs in 1943 were reflected in a 4 percent increase in wages amounting to 14 cents per capita. Fire losses were 20 to 25 percent higher for all population classes of cities. The average number of full-time fire employees per 1,000 population in all cities of more than 10,000 was the same in 1943 as in 1942—1.30, according to the International City Managers' Association.

Of 662 cities in the 10,000 to 25,000 population group reporting, almost half reported more volunteer than full-time paid firemen. Thirty-three of the 410 cities of more than 25,000 population also reported more volunteer than regular firemen.

Per capita expenditures for salaries of fire department employes increased from $3.02 in 1942 to $3.16 in 1943. With an average salary increase of $100 a year for all cities, those of more

Speaking of Speeds

ADAMS MOTOR GRADERS *Have* THEM

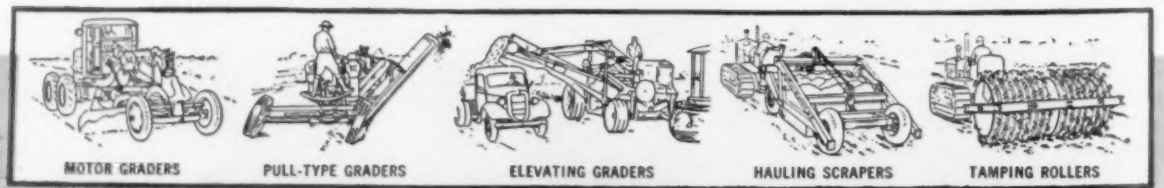
One of a series of ads on Adams motor grader features

AVAILABLE working and travel speeds have a lot to do with what you can accomplish with a motor grader in a day whether it be on construction work, maintenance or snow plowing . . . First, you want a motor grader that will travel to the job quickly. Adams Motor Graders have high travel speeds which cut down travel time . . . When you get on the job you want to make each cut at the fastest practical speed. Adams wide and flexible range of working speeds permits you to get the fastest practical speed for each cut to be made.

On surface maintenance Adams rigidity and balanced weight distribution permit maintaining at speeds higher than satisfactory with most machines. The grader pictured above is maintaining crushed stone roads at 5 to 6 m.p.h. . . . On all work, from bank to bank, Adams ease and economy of operation and quick adaptability to all kinds of cuts make Adams Motor Graders your best buy—always. Talk them over with your local Adams dealer—and use his services in keeping your present equipment rolling.

J. D. ADAMS COMPANY · INDIANAPOLIS, IND.

At war's end we'll need many new roads and many jobs for returning service men. Plan post war projects now and meet both needs.



ADAMS ☆ ROAD-BUILDING AND ☆ EARTH-MOVING EQUIPMENT

Street Maintenance in Ft. Wayne

ASPHALT street maintenance went up slightly in Ft. Wayne, Ind., during 1943, according to the Annual Report issued recently by Asphalt Superintendent W. H. Droege. Maintenance costs were $0.0067 per square yard or $78.60 per mile in comparison with $0.0057 per square yard for 1942.

The total asphalt pavement maintained in 1943 was 2,833,389 square yards. The cost of repairs for this extensive yardage was $28,747.23. The average age of the asphalt pavements repaired was 25 years.

A partial summary of additional important data presented in this report for 1943 follows:

Total tons of new asphalt mix manufactured and used	1,791
Total days of actual repair operations	279
Amount expended for asphalt mixture manufactured, transported, and placed in repairs of brick, concrete, macadam, and other than regular asphalt street maintenance ...	$9,694.11
Amount expended for asphalt mixture manufactured, transported and placed in regular asphalt maintenance on 2,833,380 square yards, bituminous surfaces	19,053.12
Expenditure for operation of the asphalt plant and laboratory	28,747.23

The oldest asphalt-paved street in the United States in use and open to traffic is located in Fort Wayne. It is West Wayne Street, from Harrison to Nelson, with an area of 19,500 square yards. The pavement was laid in 1889, 55 years ago.

Financing H. R. 4915 Proposed Road Bill

SAMUEL C. HADDEN, chairman of the State Highway Commission of Indiana, in a recent release said:

"A question frequently raised has to do with where the federal government is to obtain the money to finance the proposed roads bill H. R. 4915.

"The answer to that question is that the federal government will collect more from highway users each year from present motor and fuel imposts, than the amount of this appropriation," he said. "In the fiscal year ending June 30, 1942, for example, the federal government collected from the highway users of the country from the gasoline, use tax, and similar levies, over $670,000,000. That would probably be only an average year after the war, and since the pending bill provides for the appropriation of only $500,000,000 annually, it will be seen that even on that basis the federal government would still be practicing the form of diversion which it has condemned when practiced by the states."

It is estimated that the federal government collected approximately $12,500,000 in taxes from highway users in Indiana in 1943. Should the bill become law, Indiana's annual federal allotment would be $12,416,500.

"There is no reason whatever why the federal government should increase the taxes it is now imposing upon highway users in order to carry out this program," Mr. Hadden said. "On the other hand, and I am completely convinced of this fact, the federal government will not reduce its present levies on the highway users even if this bill is not enacted into law. It is simply a question of whether we are going to compete for our own money or not. Shall we insist that it be expended on our roads or streets or allow it to be diverted for the general purposes of the federal government? Shall we spend this money in the United States or in the war-devastated regions overseas? Shall be spend it in Tunis or in Terre Haute? For my part I wish to be recorded as voting for the expenditure of this money on the roads and streets of our own country."

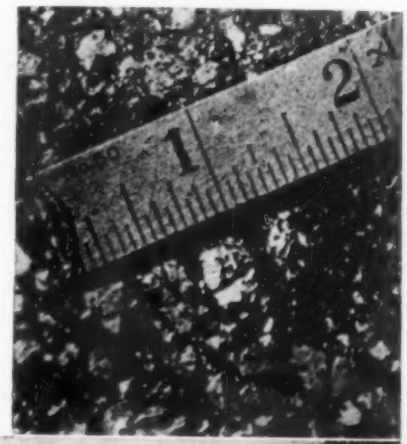
Surfacing with Paving Grade Asphalt

INSTEAD of using a liquid asphalt, or a soft grade of asphalt cement in treating street surfaces, the one employed here is a comparatively hard asphalt cement.

Heavy-traffic main arteries, as well as residential streets, have been improved by this method.

An important feature of the work is the requirement that the slag used as cover be heated to 275-325° F. before it is spread over the asphalt. If this requirement is religiously adhered to, the high temperature of the slag permits it to drill itself into the asphalt which is intensified by the rolling that follows immediately.

The thickness of the mat formed by this method is from ¼ to ⅜ of an inch. As shown by one of the acompanying photographs, the mat is definitely non-skid in character. No trouble is experienced from bleeding. The average age of this type of improvement is over seven years.



RIGHT: *This close-up photograph reveals the non-skid texture of the street surface after using paving asphalt.*

BELOW: *Hot slag cover is being applied by a mechanical spreader to the asphalt cement.*

MI-CO METER

requires only one service call in 15 months!

For more than a year officials of an east coast city subjected a MI-CO Parking Meter to all sorts of tests. This is a part of their report: "We have had this meter in continuous operation winter and summer with pleasing and satisfying results. *During a fifteen month period we had one service call on the meter.*" Other cities, some with hundreds of MI-CO Meters, report similar experiences. ¶ It's rugged construction and fewer moving parts that enable MI-CO Parking Meters to give such dependable, low-cost performance over long periods of time and under severest weather conditions. They have solved parking problems in many congested shopping areas, and have been endorsed by city officials and merchants wherever installed. ¶ When manufacturing restrictions are lifted, MI-CO Meters will again be available. In the meantime, send for fully illustrated folder which tells more about the advantages of MI-CO Parking Meters.

MI-CO METER CORPORATION
231 Court St., COVINGTON, KY.

Manufactured under the patents of F. L. Michaels
by The Michaels Art Bronze Co., Inc.

Stop—Check and Mail

Please check over the following list of interesting catalogs obtainable free of charge and either write direct to the manufacturers for their literature, or, if you prefer, put a circle around the identifying numbers below to indicate the catalogs you want, mail this coupon to The American City Magazine, 470 Fourth Ave., New York 16, and we will see that catalogs are sent to you without expense or obligation on your part.

9/44

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Address ----------

A Versatile Tractor Loader

339. A tractor loader that will do a variety of jobs for you with ease and skill is the Sargent Overhead. Information may be secured from Maine Steel, Inc., South Portland, Maine, on this equipment showing how it can be used for loading from stock piles, digging and loading on street excavation, working as a bulldozer, as a snow loader, and as a crane.

One-Man Pipe Installation

340. One man can lay pipe in your municipality without expensive trenching. Booklet S-117 of the Greenlee Tool Co., Division Greenlee Bros. & Co., 2028 Columbia Ave., Rockford, Ill., offers you descriptive and illustrative material on the Greenlee hydraulic pipe pusher that in nine easy steps can lay pipe underground for water, sewer lines and conduits for electricity.

Traffic Control Signaling

341. Have you a traffic flow problem in your community now or do you anticipate one after the gasoline shortage lets up? You may secure literature from the Eagle Signal Corp., Moline, Ill., on their traffic control systems, and the company's engineers are ready to assist you in your planning to meet these problems.

Turbine Flow Rate Measurement

342. Bulletin 420 of the Simplex Valve & Meter Co., 6789 Upland St., Philadelphia 42, Pa., describes and illustrates the operation of the W-K Principle in combination with Simplex MO Meters. The MO Meter accurately indicates, records, and totalizes flow-rate measurement of Differential Taps in water turbines. Taps are placed on turbine installations already operating, as well as on new constructions.

Clear Streets of Snow

343. Officials responsible for the clearance of snow from streets during the winter months will be interested in Bulletin 1040 of the George Haiss Mfg. Co., Inc., 140th St. and Park Ave., New York 51, N. Y. This discusses the Haiss snow loader which is a self-propelling, self-feeding, digging and loading machine which does a complete job. You will find a discussion of snow loading, details on design of the loaders, operating data, advantages, and a listing on the models available.

Filter for Removal of Iron and Manganese Salts

344. Water works superintendents will be interested in Bulletin FF published by Hungerford and Terry, Inc., Clayton, N. J. This discusses the Ferrosand Filter used for the removal of soluble iron and manganese salts from well water. The bulletin contains a description of the equipment, details on its operation, information on sizes and typical installation data.

Emergency Power

345. Water works and sewage disposal pumping stations will find use for Buffalo gas and gasoline engines when primary power failure makes necessary a stand-by unit. Bulletin No. 315, published by the Buffalo Gasolene Motor Co., 1280-90 Niagara St., Buffalo 13, N. Y., describes the work Buffalo engines can do and pictures show typical installations.

Dual Purpose Fire Pumps

346. The Barton-American Dual Purpose pump may be used for 600 pounds pressure for fires that need fog, or 200 gallons per minute at conventional pressures for booster or leader-line service. You may get further information on this pump, the GK-100, from the American-Marsh Pumps, Inc., Battle Creek, Mich., telling how it can be mounted on the front of your present pumper, service truck, or utility car without the need of buying complete new pieces of equipment.

A Guide to Safety and Fire Equipment

347. A Buyers' Encyclopedia featuring more than 500 separate items in the industrial maintenance, safety, and fire protection fields is offered by the General Detroit Corp., 2270 E. Jefferson Ave., Detroit 7, Mich. Profusely illustrated, it will be of particular interest to municipal officials concerned with fire-fighting, police protection, safety and alarms. A feature of the book is the actual data it contains on such subjects as sizes and types of hose threads, nozzle and fire stream data, information on proper maintenance of fire hose, types of extinguishers and fires for which they are best suited, information on the proper care of ladders and kinds of fires.

Totalizing Flow Meter

348. Bulletin 350, published by Builders Providence, Inc., 9 Codding St., Providence 1, R. I., describes Builders Propelloflo meter, a propeller type totalizing flow meter for main line metering with a direct reading digit counter. The booklet lists its applications, describes the meter, and gives installation data.

Better Seed for Better Lawns

349. The Belt Seed Company, Inc., Baltimore 2, Md., will be glad to supply your grass seed. Their triple-laboratory-tested seed will help you plan better lawns for your parks, golf courses, and municipal grounds.

Improve Your Parks and Public Grounds

350. To insure better grass and sod in your community you will want to look into the Royer Jr. Compost Mixer. Literature is available from The Royer Foundry & Machine Co., 179 Pringle St., Kingston, Pa., which will give you details on the work this does to shred, mix and aerate compost, soil, moisture and other materials that help make healthier and better-looking grounds.

Complete Hydrant Service

351. Hydrants for all climates is the subject of a brochure being offered by M. Greenberg's Sons, 765 Folsom St., San Francisco 7, Calif., entitled "Hydrants By Greenberg." This discusses their line of fire hydrants including Greenberg's California type with individual integrally constructed globe type valves on all outlets.

Water Supply Mains

352. The Lock Joint Co., Ampere, N. J., is ready to assist municipalities in mapping out post-war projects involving installation of water supply mains, sanitary sewer lines, storm drains, culvert and subaqueous lines. Information may be obtained from the company to help assist you with any problem where reinforced concrete pressure pipe can be utilized.

Calculate Figures Automatically

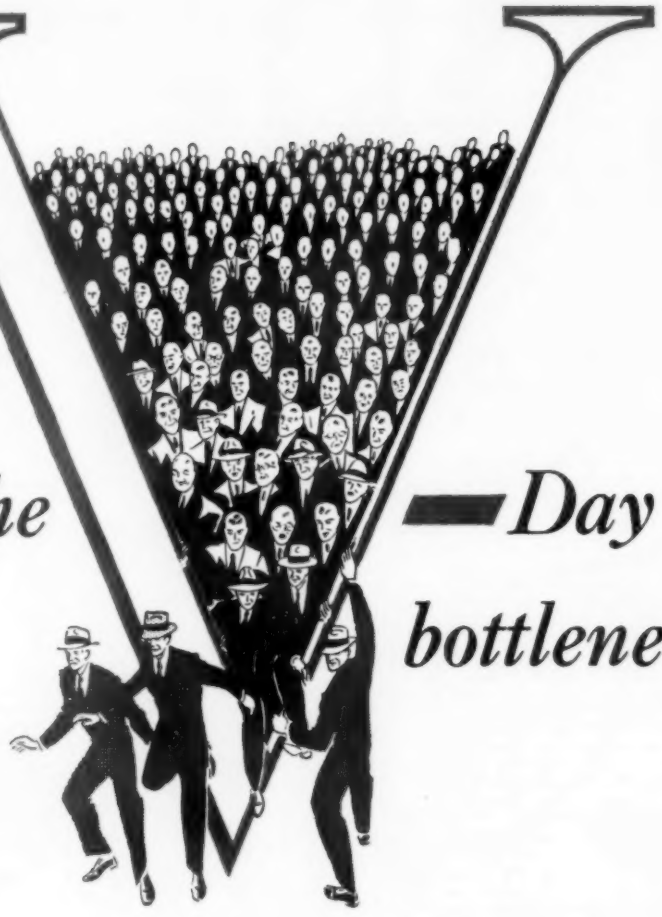
353. For accurate and speedy calculation of figures you will be interested in information on the Friden automatic calculator. The Friden Calculating Machine Co., Inc., San Leandro, Calif., points out that an operator need only set both factors of any calculation and touch one key and the answer appears.

Metallurgical Development for Pump Parts

354. Water Works superintendents interested in the properties of pumps will find of interest Bulletin A-7 of the Pomona Pump Co., Division of Joshua Hendy Iron Works, Sunnyvale, Calif., giving the story on Pomoly. This is a high strength plain cast iron that was born in the company's foundries and is designed especially for use on various cast iron parts of Pomona pumps. The booklet shows the need for the development of just such a product, what it brings to the pumps in the way of density, hardness and durability.

(Continued on page 21)

How to *by-pass the* V-Day *bottleneck*



IT WON'T be long now. In fact, it may have happened before this message is published. But, in any case, remember this . . . when priorities are lifted there's going to be a rush for equipment of all types and there's bound to be a bottleneck.

If it's water conditioning equipment you need, this bottleneck can be by-passed. You can get all the preliminary work done now . . . the designing, engineering, estimating that takes weeks and months . . . and be ready for production on V-Day.

Yes, Graver will send a water conditioning engineer to sit in with your planning board. His knowledge and broad experience in handling water conditioning problems of all types are at your service. He will analyze your raw water supply . . . make unbiased recommendations as to the type of equipment best suited to the job . . . supply preliminary drawings . . . and submit complete estimates.

Think what that means to you. Your preliminary work is done . . . you're in line for immediate production when restrictions are lifted . . . while the less foresighted are just getting started.

We're ready to serve you. Your request for a consultation with a Graver engineer incurs no obligation. Let's get started . . . today.

Process Equipment Division
of

GRAVER TANK & MFG. CO., INC.

4809-35 Tod Ave., East Chicago, Ind.

NEW YORK CATASAUQUA, PA. CHICAGO TULSA

GRAVER

WATER CONDITIONING EQUIPMENT

Hot Process Water Softeners • Zeolite Water Softeners • Water Filters • Iron Removal Filters • Oil Removal Filters • Taste and Odor Removal Filters • Swimming Pool Equipment • Reactivators • Chemical Feeding, Mixing, and Proportioning Equipment • Sewage Treatment Equipment.

Check These Columns—and Use Coupon on Page 19

(*Continued from page 19*)

Find Buried Pipe in Minimum Time

355. Looking for a way to help you cut down valuable time when trying to locate valves, pipe, and mains? A 16-page booklet is being offered by the Fisher Research Laboratory, 1961 University Ave., Palo Alto, Calif., on the M-Scope—the buried pipe and cable finder. Here you will find details on the working of this equipment, the ease with which it is operated and the simplicity of its principle.

Outdoor Fountains

356. If you are interested in reliable outdoor water services that will need only occasional rewasherings and will be out of service a minimum number of days, write The Murdock Mfg. & Supply Co., 426 Plum St., Cincinnati 2, Ohio, for literature. Their hydrants, street washers, and drinking fountains are all anti-freeze units.

To Speed Your Bituminous Construction

357. Write The Kwik-Mix Concrete Mixer Co., Port Washington, Wis., for catalog Bac if you are interested in a bituminous mixer. The catalog describes the Kwik-Mix bituminous non-tilting mixer for applying hot or cold laid mixtures. The quick acting, wide discharge gate of the non-tilting drum reduces the time between batches. Equipment includes two burners which can be easily removed for controlling temperatures.

Cast Iron and Spun Centrifugal Pipe and Fittings

358. Catalogs are available from the Warren Foundry and Pipe Corp., 11 Broadway, New York 4, N. Y., describing its cast iron pipe and special castings, various type joints, tubes and fittings, high pressure fire service pipe, warren short body specials, and threaded end pipe in sizes from 2 to 84 inches.

Portable Compressors

359. Information about Gardner-Denver portable compressors, hand drills, paving breakers, spaders, air hoists, grout pumps and wagon drills may be had by writing Gardner-Denver Co., Quincy, Ill. Literature describes these various types of construction equipment, their rugged construction, ease of handling and suitability of each to the type of work for which it was designed.

Blueprint Now

360. General Electric Co., Schenectady 5, N. Y., has a well-qualified staff of consultants ready to help municipalities draw plans for replacing, extending or modernizing water and sewerage systems. To be ready to start construction when the right time comes, start planning now. A request for help will start these consultants to work in your behalf at once.

Police Signaling System

361. If you are interested in a signaling system that coordinates police activity bringing the department up to a high degree of efficiency by allowing a swift dispatch of calls with secret intercommunication and giving the department a permanent record of its activities, write The Gamewell Company, Newton Upper Falls 64, Mass., for catalog No. P203, or write the company with any questions you may have about any present or post-war need.

Liquid Level Controls

362. A complete description of the many types of liquid level controls together with wiring diagrams for the various installations will be found in catalog 943, a copy of which can be obtained by writing B/W Controller Corporation, 2206 East Maple Road, Birmingham, Mich. These devices control variations of levels of ¼-inch or more.

Wells Produce Water That Is Sand Free

363. If you are interested in developing large ground water supplies write for information to the Kelly Well Co., Inc., Grand Island, Neb., for information about their concrete cased wells that produce ground water sand free.

Water Pressure Relief Valves

364. The Golden-Anderson Valve Specialty Co., Fulton Building, Pittsburgh 22, Pa., offers information about pressure relief valves of sizes from 3 to 36 inches. The valve operates to maintain desired line pressure and may be arranged either with atmospheric pilot valve exhaust or as a self-contained unit, according to requirements.

Lamps for Adequate Street Lighting

365. Catalog material available from the Slater Electric & Mfg. Co., Inc., Brooklyn 17, N. Y., will show you details of the performance and value of Slater lamps. This contains details on the engineering, research, manufacturing procedure, and the tests and inspections that each lamp receives before it is released for consumption.

Fire Apparatus Designed for You

366. Efficiency in fire-fighting apparatus repays you many times for the original outlay. Ward LaFrance Truck Division, Great American Industries, Inc., Elmira, N. Y., manufactures fire apparatus including pumpers, quadruples and service ladder trucks that will meet your community's needs whether large, small or unusual. Write for engineering data and details on this equipment.

Hydrants for Quick Water

367. The Ludlow Valve Mfg. Co., Inc., Troy, N. Y., will send you complete information on its line of hydrants. The company points out that these hydrants will give you quick water, proper shut-off without water hammer, correct drainage, and can be easily inspected and serviced.

Meter for Fire Services

368. Water works superintendents will be interested in information on the Hersey Detector meter manufactured by the Hersey Mfg. Co., South Boston, Mass., discussing its accuracy in metering fire services. The company asserts that it delivers full capacity of the supply pipe without endangering the pressure.

Centrifugal Pumps

369. Condensed catalog No. 743 is available from Economy Pumps, Inc., Hamilton, Ohio, on their centrifugal pumps. Among those illustrated and described are clear liquid pumps both horizontal and vertical, sump pumps, sewage pumps, and axial flow pumps.

Steel Shapes and Forms

370. Data may be obtained from Joseph T. Ryerson & Son, Inc., 16th and Rockwell Sts., Chicago 80, Ill., on varied kinds, shapes and sizes of steel products such as safety floor plates and reinforcing steel. Over 10,000 others are in stock for prompt shipment.

Pumps Submerged at Water Source

371. Data discussing experiences municipalities have had with their submersible pumps may be obtained from Byron Jackson Co., Box 2017, Terminal Annex, Los Angeles 54, Calif. You will be interested in information showing how this pump eliminates the need for pump houses, piping, and valving through the installation of both motors and pumps at your water source. Find out details on care and maintenance costs that will make them an important factor in your post-war plans for water supply.

Suit Snow Plows to Needs

372. Municipalities planning to fight snow more effectively by the use of more snow plows will find of interest literature available from The Baker Mfg. Co., 503 Stanford Ave., Springfield, Ill., that will help you choose the right type of plow for your requirements, and will show the effective use communities are making of the equipment they have on hand. Models include those designed for such specialized work as cleaning arterial highways in deep snow belts, hilly country highways where traction is bad, landing strips and airports, and those used on ordinary streets and parking areas, and airport aprons.

Electric Calculator of Figures

373. The Marchant silent speed electric calculator would be a great time saver in your municipality during these days of man shortage. Information is available on this machine from the Marchant Calculating Machine Co., Oakland 8, Calif.

All About "Caterpillar" Diesel Engines

374. Power users interested in knowing about "Caterpillar" Diesel Engines—what makes them stand up under the heavy tasks given them—will find a concise, simple explanation in the booklet just issued by Caterpillar Tractor Co., Peoria, Ill., "The 'Caterpillar' Diesel Way." The booklet contains action pictures and drawings illustrating the features of "Caterpillar" Diesel Tractors, motor graders and engines.

Guard Rails for Curves

375. Details on a guard to protect cars from jumping curves on highways may be obtained from the Tuthill Spring Co., 760 Polk St., Chicago 7, Ill. Learn about the high visibility of this guard, and the ease of installation and maintenance. You will want to know about the construction of the guard rail that provides a shock-cushioning effect on impact and at the same time deflects the car.

Good Looking and Durable Asphalt Surfaces

376. If your municipality is interested in its appearance, the condition of your paved streets will be of primary importance. The Texas Co., Asphalt Sales Dept., 135 E. 42nd St., New York 17, N. Y., has available a staff of engineers who are asphalt specialists and who are ready to assist you in planning the best possible surfacing in your street construction and maintenance work.

Steel Forms for Meter Box Accessories

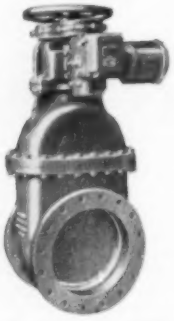
377. Though not available until after the war, information can be obtained from the Ford Meter Box Co., Wabash, Ind., on their steel forms for making concrete meter box tiles and barrels. Data will give you details on sizes and lengths available, and costs.

(*Continued on page 22*)

IOWA

VALVES

Recognized Design and Workmanship



HYDRANTS

Latest "Corey Type"

For information on Fire Hydrants, Gate Valves, Electric and Hydraulic Valves, Check Valves, Sluice Gates, Tapping Valves and Sleeves, Flap Valves, Plug Valves and Shear Gates, write:

IOWA VALVE CO.

General Offices: Hubbell Bldg., Des Moines, Iowa

Plant: Oskaloosa, Iowa

CHECK THIS COLUMN— AND USE COUPON ON PAGE 19

(Continued from page 21)

Soft Water

378. The "Spiractor," the new cold lime-soda water softener introduced by The Permutit Co., 330 W. 42nd St., New York 18, N. Y., is the subject of Bulletin 2384. The catalog briefly outlines the principle involved and the design of the equipment, and shows how it cuts detention time, leaves no sludge to be disposed of and saves steel and space. Some operating results are listed as well as a line drawing showing the arrangement of the equipment.

Save Steel Tanks from Corrosion

379. Engineers and operators of steel water tanks will be interested in detailed information from the Rusta Restor Division of The Johnston & Jennings Co., 861 Addison Rd., Cleveland 14, Ohio, on their electrical method of corrosion control. Learn how the current required in one light bulb can prevent rusting of the tank as well as the gradual removal of the effects of any earlier rusting.

Main Line Water Meters

380. Water works and sewage officials may secure Bulletin 308 from R. W. Sparling, Box 3277, Terminal Annex, Los Angeles 54, Calif. This deals with their main line meters showing the accuracy and service they make possible.

Regenerative Turbine Pumps

381. Bulletin W-324-B2 is being offered by Worthington Pump and Machinery Corp., Harrison, N. J., discussing their regenerative turbine pumps used to develop high heads at small capacities in a single stage, as the bulletin points out. Included in this catalog are a list of 14 outstanding features of the pump, typical section views of pumps showing the placing of all the parts. These pumps can be furnished for direct motor drive, steam turbine, gasoline engine or flat or multi-v-belt drive.

Post-War Fire Apparatus

382. Is new fire apparatus for your city a "must" on your post-war planning list? Data may be obtained from The Seagrave Corporation, Columbus, Ohio, giving you details on the design and construction of the motors, pumps bodies and other parts of their apparatus.

Aluminum in Sewage Treatment Plants and Water Works

383. Aluminum alloys because of their high resistance to corrosion are particularly well suited to treatment works grating. This product is light and easy to handle and where fire and explosion hazards exist the non-sparking quality of aluminum is a distinct advantage. For information about this product write Aluminum Company of America, 2172 Gulf Bldg., Pittsburgh 19, Pa., or consult your usual supplier. This metal is again available for civilian use on approval from the War Production Board.

Keep Pumps Primed

384. Water works and sewage disposal plants can make use of Apco automatic pump primers which automatically prime the pumps to which they are attached whenever the pump is shut down so that it is always ready to pick up its load. Bulletin No. 402 published by Valve and Primer Corp., Room 366—111 W. Washington, St., Chicago 2, Ill., discusses these primers giving details on the operation of the primers, their advantages, data required for proper selection and sizes and weights.

Proper Street Lighting

385. Good street lighting is a "must" if your community needs to cut down traffic accidents and crime waves. If you would like to know what other cities are doing along these lines the Street and Traffic Safety Lighting Bureau, 155 E. 44th St., New York 17, N. Y., will be glad to supply you with data about cities that have solved these problems, and also will send you a copy of "Post-War Traffic Plans for the City of Buffalo."

Test Mains as They Are Laid

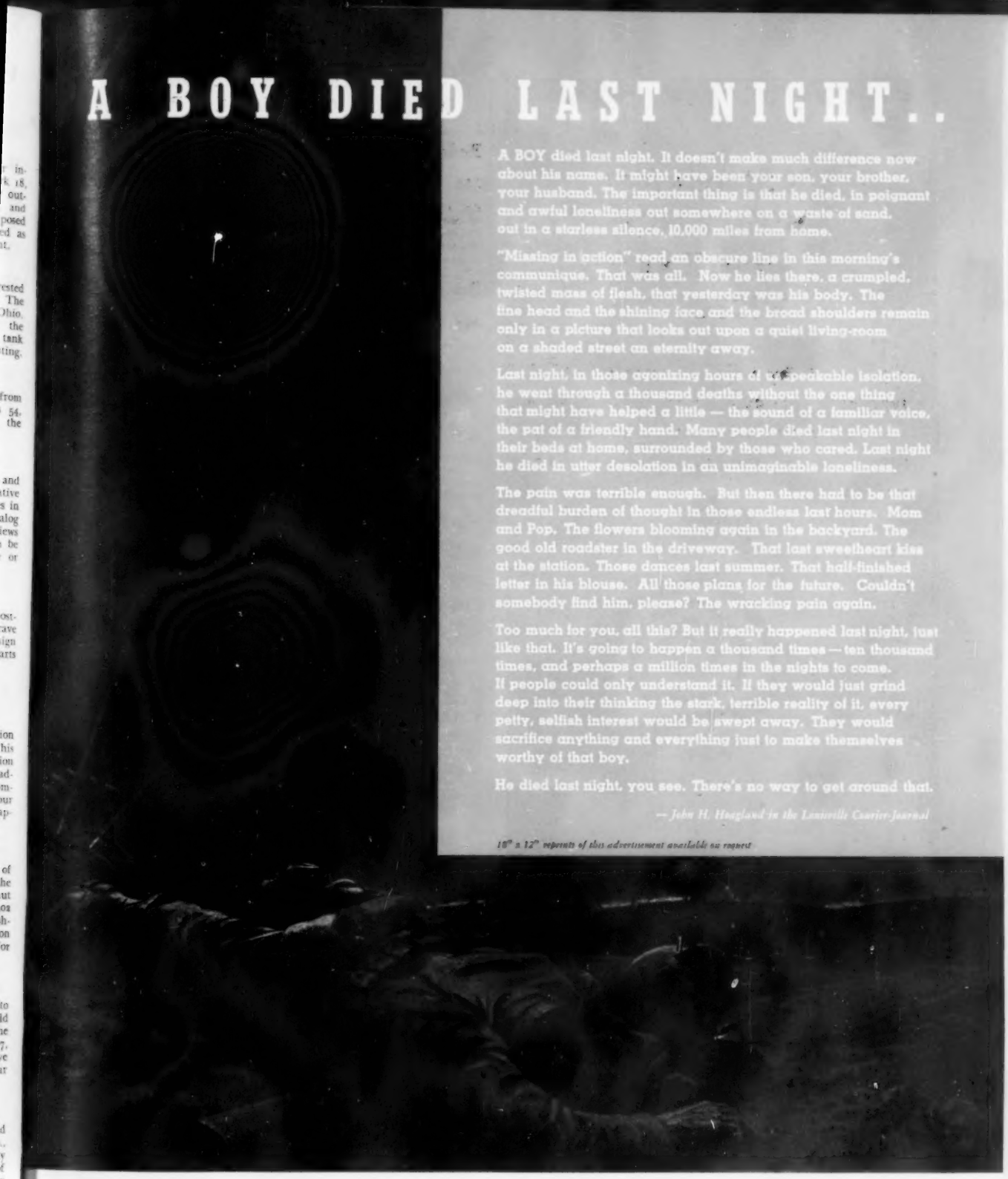
386. Water works officials may test mains as they are being laid with the "Hold Firm" test plug of the Test Plug Mfg. Co., Skokie, Ill. A circular may be obtained from the company showing the advantages of this procedure such as the elimination of open trenching and its hazards, and the necessity of valves. It may be used on cast iron, steel, transite, soil, and concrete pipe lines and also may be used for testing required pipe valves and fittings. It is made in all sizes.

Adequate Supply of Water Service Pipe

387. The American Smelting and Refining Co., Lead Products Division, 120 Broadway, New York 5, N. Y., is now able to supply Type K Tube-Loy water service pipe in any quantity. This tubing is offered in thicknesses adequate to withstand steady working pressures up to 125 pounds and is galvanized to resist corrosion. Literature about this product may be obtained by writing the company.

(Continued on page 24)

A BOY DIED LAST NIGHT..



A BOY died last night. It doesn't make much difference now about his name. It might have been your son, your brother, your husband. The important thing is that he died, in poignant and awful loneliness out somewhere on a waste of sand, out in a starless silence, 10,000 miles from home.

"Missing in action" read an obscure line in this morning's communique. That was all. Now he lies there, a crumpled, twisted mass of flesh, that yesterday was his body. The fine head and the shining face and the broad shoulders remain only in a picture that looks out upon a quiet living-room on a shaded street an eternity away.

Last night, in those agonizing hours of unspeakable isolation, he went through a thousand deaths without the one thing that might have helped a little — the sound of a familiar voice, the pat of a friendly hand. Many people died last night in their beds at home, surrounded by those who cared. Last night he died in utter desolation in an unimaginable loneliness.

The pain was terrible enough. But then there had to be that dreadful burden of thought in those endless last hours. Mom and Pop. The flowers blooming again in the backyard. The good old roadster in the driveway. That last sweetheart kiss at the station. Those dances last summer. That half-finished letter in his blouse. All those plans for the future. Couldn't somebody find him, please? The wracking pain again.

Too much for you, all this? But it really happened last night, just like that. It's going to happen a thousand times — ten thousand times, and perhaps a million times in the nights to come. If people could only understand it. If they would just grind deep into their thinking the stark, terrible reality of it, every petty, selfish interest would be swept away. They would sacrifice anything and everything just to make themselves worthy of that boy.

He died last night, you see. There's no way to get around that.

— John H. Hoagland in the Louisville Courier-Journal

18" x 12" reprints of this advertisement available on request

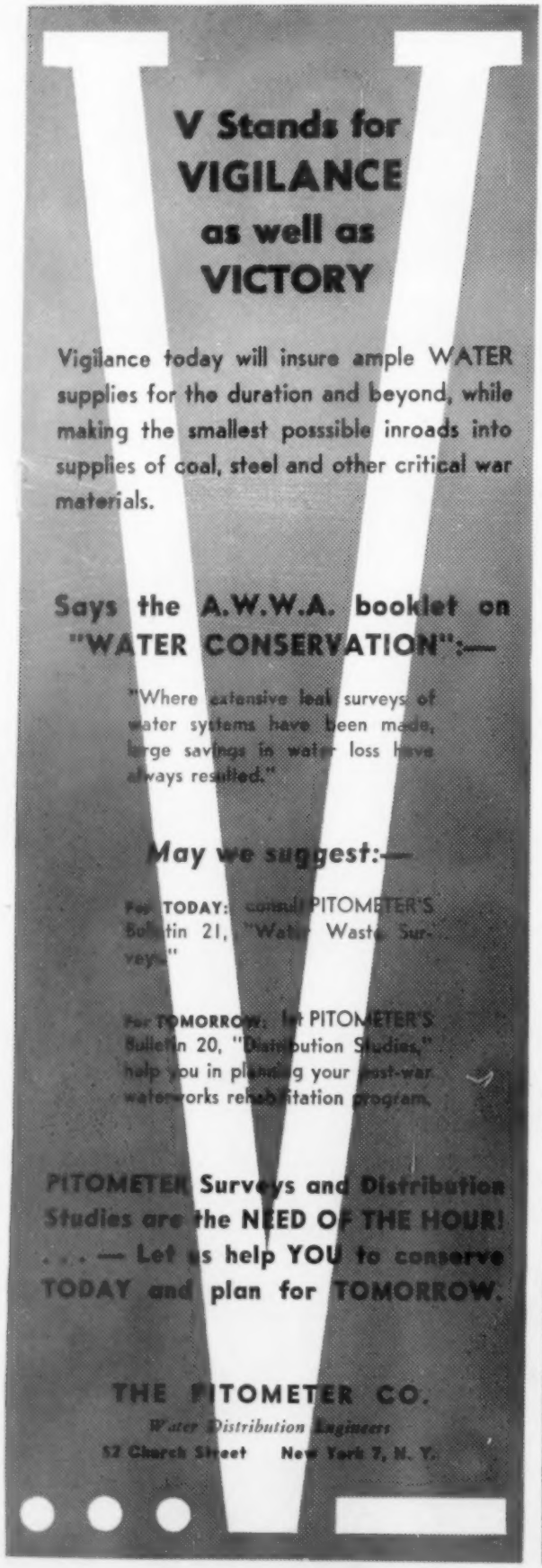
HOW TO HELP WIN THE VICTORY . . . — AND PEACE!

- Place Idle Equipment in Essential Industries
- Make Your Machines Last By Keeping them Repaired
- Urge Completion of Plans For Postwar Projects
- Help Plan Jobs For Returning Service Men

- DONATE YOUR BLOOD • TURN IN SCRAP METAL • BUY AND KEEP WAR BONDS • SAVE WASTE PAPER • NEVER PAY OVER CEILING PRICES

ALLIS-CHALMERS

TRACTOR DIVISION — MILWAUKEE 1, U. S. A.


V Stands for
VIGILANCE
as well as
VICTORY
Vigilance today will insure ample WATER supplies for the duration and beyond, while making the smallest possible inroads into supplies of coal, steel and other critical war materials.
Says the A.W.W.A. booklet on "WATER CONSERVATION":—
"Where extensive leak surveys of water systems have been made, large savings in water loss have always resulted."
May we suggest:—
For TODAY: consult PITOMETER'S Bulletin 21, "Water Waste Surveys."
For TOMORROW: let PITOMETER'S Bulletin 20, "Distribution Studies," help you in planning your post-war waterworks rehabilitation program.
PITOMETER Surveys and Distribution Studies are the NEED OF THE HOUR! . . . — Let us help YOU to conserve TODAY and plan for TOMORROW.
THE PITOMETER CO.
Water Distribution Engineers
52 Church Street New York 7, N. Y.

CHECK THIS COLUMN— AND USE COUPON ON PAGE 19

(*Continued from page 22*)

Reflecting Signs Save Lives

388. Are streets and highways in your community equipped with signs that are sufficiently visible both night and day? Literature is available from the Minnesota Mining and Manufacturing Co., St. Paul 6, Minn., on "Scotchlite," a reflecting sign material. This discusses its effectiveness as a visible agent at all times and gives information on other features including its low installation and maintenance costs, and the ruggedness of the material that protects it from being marred or impaired.

Bring Out-of-Date Lighting Systems Up-to-Date

389. The Line Material Co., Milwaukee, Wis., offers a booklet telling "How to Modernize Your Street Lighting at Little Cost." The booklet points out the advantages of modern lighting and how this may be obtained without new poles or wiring and often only by installing L-M reflectors. The company handles a complete line of street lighting equipment.

Maintain Utility Service

390. Printed matter entitled "3 Devices Essential to Modern Utilities Maintenance of Service" may be obtained from the Joseph G. Pollard Co., Inc., 141 Ashland Pl., Brooklyn 1, N. Y. The folder discusses the Fisher M-Scope box locater, leak detector and pipe finder in some detail, pointing out the savings they effect in manpower and costs by the elimination of road and ground surface cutting and excavation. The pamphlet contains a list of users of the equipment.

Valves to Fit Your Needs

391. Literature and complete details are available from the Ross Valve Mfg. Co., Inc., P. O. Box 596, Troy, N. Y., on Ross automatic valves, containing information on their surge relief valves, altitude valves—single or double-acting, or reducing valves.

Data on Water Meters

392. Since water meters are an important part of your plant, you will want to know all about them. Buffalo Meter Co., 2902 Main St., Buffalo 14, N. Y., will send you printed matter on American and Niagara meters discussing their construction, the qualities that make them outstanding, and the ease with which they may be repaired.

Pumps for Lifting Water

393. Are you discussing plans for post-war installation of pumps in your water system? Information is available from the Peerless Pump Division—Food Machinery Corp., 301 W. Avenue 26, Los Angeles 31, Calif., giving details on the design and features of their Hi-Lift pumps for lifting maximum amounts of water from small diameter wells. They are available with electric motors or with belt or right angle gear drive heads.

Water System for Your Community

394. Layne & Bowler, Inc., Memphis 8, Tenn., are offering to water works men new literature on their well-water systems so that you may have the latest information for your plans for post-war construction. Data is included on the type of system for your community and the quality of workmanship and material in it.

Garbage and Refuse Incineration

395. Bulletin 212, published by the Nichols Engineering & Research Corp., 60 Wall Tower, New York 5, N. Y., will give garbage and refuse disposal officials information on the Monohearth. This method of inceration uses the revolving cone with stoking arms so constructed that it separates the mass of refuse and allows preheated air to mix with the combustible material. The literature discusses the advantages of the equipment and the savings it effects.

Diesel Power

396. Municipal electric plants contemplating increasing generating capacity after the war will be interested in information from the Nordberg Mfg. Co., Milwaukee 7, Wis., discussing the advantages of the Nordberg Diesels. These are available in capacities up to 6,000 kw in a single unit.

Machine Shop Data

397. A series of booklets published by The Oster Mfg. Co., Cleveland, Ohio, will be highly valuable to municipal machine shop operators. Bulletins 500, 422, 502, and 562 give operators' maintenance, and spare parts data on their pipe and bolt threading machines, on their portable power drive for hand pipe tools, and on their "Pipe Master" and "Tom Thumb" pipe threading machines.

Courses for Municipal Training

398. Aimed to provide cities with a means of training administrators for advancement or replacement, The International City Managers' Assn., 1313 E. 60th St., Chicago 37, Ill., are offering nine practical correspondence courses in this field. A special circular is available giving complete details on the subjects covered and the method of reviewing the lesson papers.

Vol. LIX, No. 9 The American City September, 1944

How to Raise and Lower Mains Under Pressure

The Water Department of Brookline, Mass., outlines its procedure for revising grades in existing water mains while maintaining pressure and service. Tests disclose the amount of deflection a bell and spigot joint can take.

By WALTER B. BUSHWAY
Superintendent, Water Department

FROM time to time the Brookline Water Department has found it necessary to raise or lower its mains in order to meet changes in surface grades and to install new drainage structures.

A few years ago we lowered a pair of force mains which had been laid through a cedar swamp and supported on artificial wooden foundations. The foundations had rotted away due to the lowering of the water level in the swamp by a recent sewer installation, and in several sections peat fires had destroyed the upper sections of the pile bents and the pipes had assumed a fantastic alignment as they had settled onto the peat support.

This line was composed of pipes 14 and 20 inches in diameter, the former having been laid in 1874 and the 20-inch size in 1893. It carried water to the town from the pumping station on the Charles River in West Roxbury to the low services reservoir on Fisher Hill, Brookline, a distance of 5¼ miles. These pipes were cast according to the N.E.W.W.A. specifications which would approximate the standard Class C pipe A.W.W.A. specification of today. Originally the pipes had been laid 42 inches on centers.

The first step was to construct concrete piers and beams under the pipes and finish off at a grade approximately 5 feet below the original grade of the pipes.

On completion of the concrete supports, alternate bells were uncovered. These bells were blocked with 2 x 6 third grade fir blocking directly onto the new concrete work. Then the entire length of the pipes were cleared of material and excavation was carried to the concrete surface for a distance of 750 feet and to a width of 3 feet outside of the pipes, thus making a lowering job of 1,500 feet of mains. At proper intervals lateral bracing was placed to prevent movement and to eliminate the danger of whipping off the blocking and injuring the men. Temporary blocking was also placed under the center of each pipe. The 3-foot width of excavation provided room for the men to work and to stack the blocking.

To prevent the roiling of the water by a shut-down we decided to lower the pipes under pressure while the pumps at the station were in full operation. The head on these pipes varied from 140 to 180 feet because of surging caused by several cross connections. During the lowering operation the engineers at the station stood by the main engine to control the pumpage in the event of a break and men were stationed at the control gates to close the gates by pre-arranged signals.

When everything was ready for the actual work of lowering the mains, a secondary set of blocking was placed in back of the bells about 12 inches away from the supporting blocking at the bells and 3 inches below the pipes. At the same time the blocking at the center of the pipes was carefully removed.

Starting with the 14-inch pipe at the center of the job we proceeded to knock out carefully the first set of supporting blocks with 12-pound striking hammers, 3 men working easterly and 3 men westerly, until the pipes rested on the secondary set. Three men were set to restore the lateral bracing as the pipes went down and to assist in setting up new supports. Thus, by walking up and down the line, knocking down and rebuilding, watching carefully for "frozen" joints and nursing them down, the 14-inch line was soon down to grade and resting on 4 inches of final blocking directly on the concrete supports. It was noted during the lowering process that as the men gained the knack of using the hammers, tapping lightly here and twisting the top blocks there, the lowering could be controlled and accomplished much faster. The edges of the blocks would slowly crush as the light tapping of the hammers continued and in many cases the pipes were not allowed to rest on the secondary blocks, the men removing them as fast as the pipes came down. The 14-inch pipe was down to grade in 2 hours and 10 minutes.

Lowering the 14-inch main under pressure. Blocking is on a new concrete foundation already laid to grade.

The same procedure was followed with reference to the lowering of the 20-inch main with the exception that double sets of blocks were used together because of the additional weight of the pipes. At this point the men were becoming adept with the use of the hammers and they were able not only to lower the pipes but ease them down to an almost perfect alignment. Because of this newly acquired skill the 20-inch main was down to grade in 1 hour and 40 minutes.

Other than weeping joints, no breaks occurred and the 14-inch main was soon in alignment, after which all joints were reset.

Aside from the trench work, the actual cost of labor and materials was less than $125, allowing for blocking salvaged for future use.

On completion of the work the mains were covered with fine gravel to a depth of 4 feet, the first 2-foot depth having been carefully tamped under the pipes for future support. Subsequent peat bog fires, which have burned at times for several months, have had no effect on the safety of the mains.

How a Water Main was Raised

Three years ago the construction of a sewer made it necessary for us to raise one of our 8-inch water mains in the distribution system 18 inches. The pipes were 12-foot, pit-cast, bell-and-spigot Class C. Because of the importance of this main during peak demand periods we decided to raise the pipes under pressure and adopted the procedure described below. During the raising operation the pressure gauge registered 74 pounds.

The first step was to excavate a trench 30 inches in width to the bottom of the pipes for a distance of 190 feet.

The next was to raise the center portions of this length approximately 3 inches. This required the use of three 2-ton chain hoists attached by rope slings to the three pipes at the center of the job in the back of each bell. The chain hoists were attached to pipe-leg derricks similar to those used in water works for setting hydrants or handling pipes and were made of 2-inch standard wrought iron pipe stock.

The pipes were then blocked with 18-inch 2 x 6 grade 3 fir timbers and the lifting process continued to the end of the line each way from the center, tapering off to the unchanged grades.

The process was then repeated using slightly larger lifts because the joints had been eased by the first operation and the upward movement was found to be much easier. Thus, by moving up and down the line, raising and blocking the pipes, the job was completed. Backfilling was accomplished with fine material to 12 inches above the top of the pipe and this was puddled with just enough water to permit tamping the material under the pipes to prevent settling of the pipes after the wood blocking rots away. The balance of the backfilling went in by 12-inch layers well tamped with old-fashioned tamping tools attached to air guns.

Prior to raising the pipes all gate valves were checked for operation and gate wrenches were left nearby on the tree lawns for emergency use.

When we were ready to raise the pipes we disconnected all goosenecks to the service lines at the corporation cocks and plugged the ends with waste. As soon as the pipes were raised to the final grade, the service lines were reconnected to the corporation cocks with longer goosenecks.

Simultaneous with the raising of the main, we lifted a hydrant and branch, including the emergency gate, with the same ease by the use of another 2-ton chain hoist attached to a pipe-leg derrick.

During this work it was found advisable to let the pipes assume any alignment which they took without attempting to restore them to the original line.

The actual raising of the pipe was accomplished in 4 hours by a foreman and 8 men. No leaks or breaks occurred and several sweating joints were reset.

We have also raised 10- and 12-inch mains in the same manner by applying two sets of chain falls and derricks to the back of each bell. Occasionally we have been compelled to raise our mains by the use of wooden blocks and wedges where the condition of the job with adjoining work was such that derricks could not be used and, by exercising care, have had equally good results.

Preliminary Flexing Experiments

Work of this nature obviously begs the question of how much punishment a standard joint will take and still be hydraulically and sanitarily sound. Consequently, it is interesting to note several preliminary tests made by Kenneth W. Robie, Assistant Superintendent.

In his test he used three sets of cast iron pipes, B&S, Class C, 12-foot laying lengths, four pipes to the set, jointed in the usual manner, one set with lead joints and the other two with joint compounds (black joints). Each set was capped and filled with water, after expelling the air by an air cock to 102 pounds pressure which gradually increased to 185 pounds as the effect of the sun's rays caused the water to expand. Pressure by rubber hose connections was maintained continuously day and night during the tests and for several days thereafter, to replace water which had leaked out.

Maximum Flexing

By the use of chain falls the pipes were raised at the center and given the maximum flexing that the joints would permit. Both ends were lifted free from the ground; at times men jumped on the ends in order to get additional flexing.

Next, the center was blocked and the chain falls were moved to the suspended ends when the pipes were again lifted, thus permitting the joints to flex in the opposite direction. In all cases the lead and black joints held without excessive leaking. This was a very severe test and one which would probably never occur to pipes in service, but it was our intention to ascertain just how much abuse the pipes would stand and how long it would take for the joints to reseal themselves, especially the black joints. The maximum deflection obtained on the set made up with lead joints was 26 inches in 48 feet of length. Black joint set No. 2 deflected 30 inches, while black joint set No. 3 deflected 15 inches. During these tests no pipes were affected in any way and they were later used in street work.

After 6 days the leaks in the black joints were becoming negligible as oxidation occurred. The lead joints which leaked (only 2 of the 6 joints) continued to drip as might have been expected during the duration of the tests. In one instance one of the black joints pulled out of the upper side of the socket to a distance of 1⅝ inches beyond the bell releasing a small stream which, at the end of 10 days, was reduced to a mere drip at the rate of one drop every 5 seconds.

One gained the impression as these tests were being conducted that the task of lowering pipes which had been jointed with the compound would be easier and under greater control during the lowering process because of the tendency of the compound to crush slowly as the flexing occurred and thus create a more uniform downward movement than in the case of lead-jointed pipe which would often hang and then ease off and drop suddenly.

A description of the tests made in connection with the raising and lowering of mains, follows on the next page.

Deflection and Leakage Tests

Of Bell and Spigot Joints

A Report

By K. W. ROBIE
Assistant Engineer, Water Dept.
Brookline, Mass.

THIS test was made for the purpose of determining which kind of joint material for cast iron bell-and-spigot pipe would remain the tightest under severe conditions of settlement.

Test Description

Three identical sections of class C 8-inch pipe were made up as follows: 4 lengths plus a 3-foot cut piece and 2 caps, two ¾-inch co-cocks on top of pipe at one end of the section, one connected to the supply which had a pressure of 100 pounds, the other used as a vent while filling pipe, and also one ¾-inch co-cock at the other end on the bottom of the pipe to serve the dual purpose of a drain and as a connection for pressure gauge. The three test sections were blocked in back of each bell 6 inches off the ground.

The connection to the supply was through a ¾-inch copper tubing gooseneck, 6 feet of extra heavy 1-inch rubber hose, a 1-inch x ¾-inch curb stop, a tee on 1-inch galvanized manifold pipe to test meter reading directly to 0.01 cu. ft. thence to main connection with 1-inch galvanized pipe.

The three sections were marked;

A Lead
B Powder compound
C Ingot compound

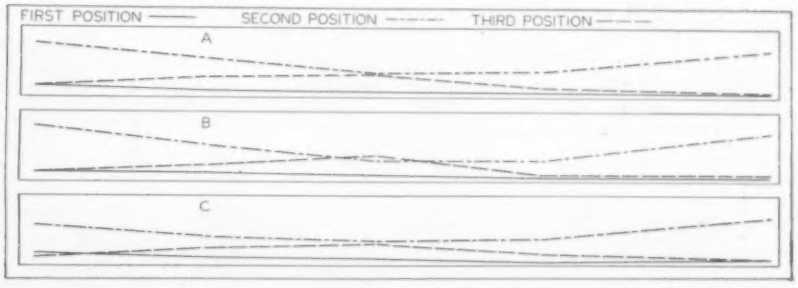
and the joints numbered from the end connected to the supply, there being six joints in each section. The joints were poured in the usual way by two experienced men using 2 strands of jute for each joint which left about 2½ inches of joint to be filled.

On July 14, 1943, pressure was applied to the three sections and maintained at 99 to 102 pounds during the whole time of the test. After 3 hours the joints were examined and the pressure drops taken. Pipe A was tight while joints on B and C were dripping. On B the pressure drop in 1 minute was 40 pounds, on C, 10 pounds. After 24 hours the drop on B was 24 pounds in 5 minutes and on C, 11 pounds, and the cap at C-1 moved out one-sixteenth. "A" section was still tight so the supply co-cock was shut to see how much the pressure would build up by the expansion of the water due to the heat from the sun; the water coming from the main was about 50 degrees and the pipe lying in the sun was about 120 degrees. This is aside from the test itself but it was thought to be sufficiently interesting to record that the pressure rose from 100 to 185 pounds in 10 minutes and started a drip at joint A-6.

On July 16, all three sections were deflected in the following manner: a chain hoist was attached to each end and the whole section raised until the middle joint was about 11½ feet above the ground and to increase the deflection a weight of 600 pounds was placed on the low part of the section. The difference in elevation between the ends and the middle was then 26 inches on A, 30 inches on B, and 15 inches on C. Joint No. 3 was then blocked up and the two ends lowered to their original position, the intermediate joints remaining suspended. After this no further deflection took place. A profile was plotted showing the three positions of the three sections and is included in this report.

Of special interest was joint B-3. In this case the compound pulled out on the upper side of the pipe 1⅝ inches beyond the bell, releasing a small stream but this reduced to a 5-second drip at the end of 10 days. Also of interest was joint C-1, the cap, which moved out and away from the joint compound ⅛-inch in 10 days. Before deflection, the leakage in B was 7½ times that in C but the day after the deflection test the leakage on C was 16 times that on B. From then on both B and C gradually sealed up until on the last day of the test they both showed only one-fifteenth of the original maximum leakage but the ratio between the two held the same, (16 to 1). In regard to A, it should be

(Continued on page 131)

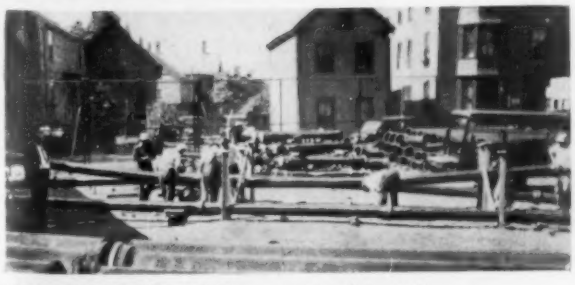


LEFT: *This close-up shows the maximum deflection placed on each joint. Despite this excessive abuse, the joints maintained pressures remarkably well.*

ABOVE: *This diagram shows the positions maintained for the three types of joint. Pipe A joint remained tight during the test while B and C dripped.*

LOWER LEFT: *At first the pipes were lifted by the ends allowing the unsupported center to sag.*

LOWER RIGHT: *The center was then blocked and the ends allowed to deflect in the opposite direction.*



Spartanburg, S. C., Enlarges

Its Fairforest Treatment Plant

A new high-rate Aero-filter installed beside a standard trickling filter provides an excellent comparison in cost and operation between the two units.

By GEO. W. WHITE
The Harwood Beebe Company
Spartanburg, S. C.

ALTHOUGH the standards of sewage treatment have not differed radically during the past 15 years, the cost of producing this treatment has dropped materially and many of the former operating problems have been overcome. This has been illustrated very clearly at Spartanburg, S. C., where a standard trickling filter installed in 1930 operates beside a high-rate Aero-filter placed in operation in 1942.

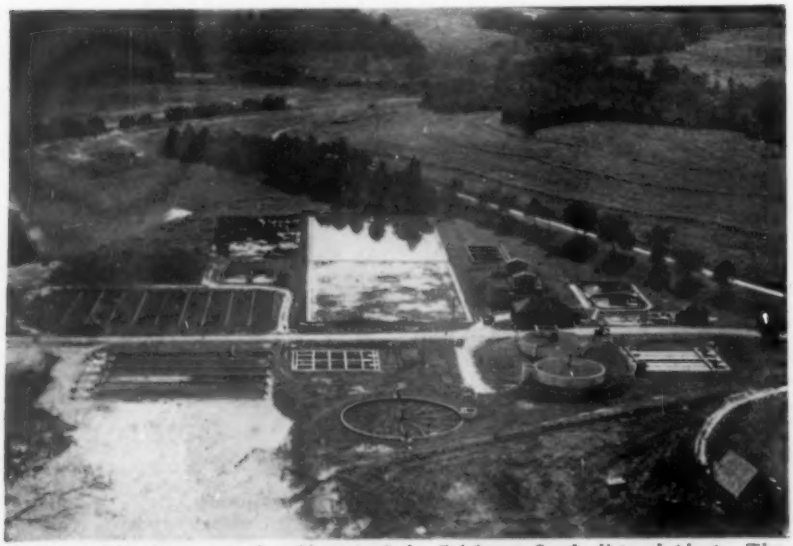
Regarding cost, the Aero-filter, with a rated capacity of 2 mgd, costs approximately 17 per cent of the slower standard trickling filter with a rated capacity of 3 mgd. Figured on a basis of cost per million gallons, this means that we were able to build the new filter approximately 76 percent lower in first cost and furnish the same degree of treatment.

Regarding operation, the new plant avoids the difficulty of ponding which is present in the old plant. Filter flies also are not so troublesome in the Aero-filter.

This phase of Spartanburg's sewerage history began in 1930 when the city was using two treatment plants. The smaller plant located southeast of the city was constructed with a capacity of 1.5 mgd. The larger plant on the Fairforest Creek, south of the city, was designed for 3 mgd. These two plants served adequately until 1940 when the population of the city and the contributing industrial communities was approximately 50,000 and the plants were loaded to about two-thirds capacity. In 1941 Camp Croft, an Infantry Replacement Center, was established just south of the city and within reach of the Fairforest Creek plant. For this reason the Government made arrangements with the city to treat the sewage from the Camp. It was thought that the existing plant might be large enough to handle the Camp sewage as well as that from the city.

Soon after activation of the Camp, however, it became evident that the new contribution badly overloaded the plant; consequently, city and government officials decided to enlarge the Fairforest Creek plant to a capacity of 5 mgd by the addition of other units. These improvements were completed in the spring of 1943.

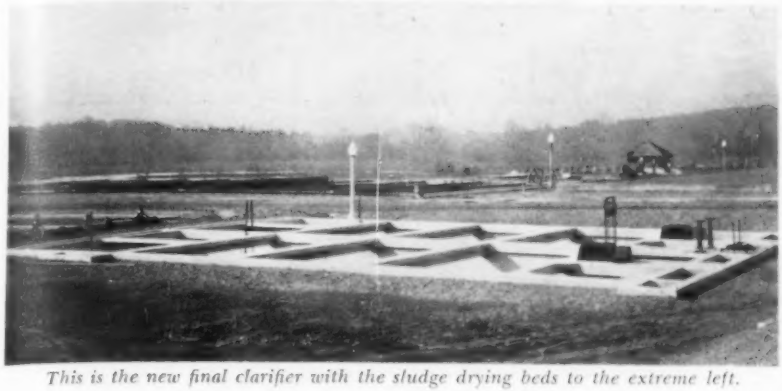
The original Fairforest Creek Plant is a complete treatment plant of the separate sludge digestion and trickling filter type. Sewage entering the plant passes through a mechanically cleaned screen, a hand cleaned grit chamber, and into twin sedimentation tanks. The tanks provide a 2-hour retention period at rated capacity and are equipped with mechanical sludge collectors and skimmers. The effluent from these tanks proceeds to the trickling filters which are rated at 330,000 gpd per acre-foot and is distributed from dosing tanks through fixed nozzles onto the filter. From here the affluent goes to a mechanically equipped final sedimentation tank for a 1½-hour retention period. The original plant had 3 sludge digesters equipped with mechanical stirrers, a control house with laboratory and pump room, and chlorination equipment.



In the middle distance is the old part of the Fairforest Creek disposal plant. The new part of of the plant is in the foreground.

New Additions

The new additions were designed along the same lines, using instead of the standard return trickling filters, a high capacity filter of the Aero-filter type. Grit removal was changed to a mechanical operation using a Dorr Detritor instead of the old hand-cleaned chamber. This collector handles all the sewage, sending part to the old sedimentation basins and part to the new. The distribution of flow to the two parts of the plant is made by two weirs on opposite sides on an effluent channel. These are adjustable to regulate the amount of sewage going to each. The sewage



This is the new final clarifier with the sludge drying beds to the extreme left.

is metered with a Venturi meter ahead of each sedimentation basin.

The new sedimentation basins are rectangular with the chain drag type of sludge collectors. They have a capacity of approximately 3 mgd at 3-hour retention periods. Part of the flow is diverted back to the old filters, thus relieving the old clarifiers of part of their load.

Aero-Filter

From the new sedimentation basins the clarified sewage flows by gravity into a head-box at the Aero-filter. A float switch located at this point controls a recirculating pump by water level in the box. The filter distributor has 10 arms, each dividing into two at mid-point, with sprinkler nozzles attached. The unit is 80 feet in diameter with an 8-foot stone depth and has a rated capacity of 2 mgd with a maximum capacity of 4 mgd. This compares with 1½ acres of filter 6 feet deep for the original 3 mgd plant.

The Aero-Filter was designed on the following basis:

Average daily flow	2 mgd
Ordinary daily maximum rate	3 mgd
Maximum peak flow	4 mgd
Minimum dosage rate	13 mgad
Maximum dosage rate	23.3 mgad
Average raw sewage BOD	330 ppm
Average raw sewage suspended solids	310 ppm

The loading per acre-foot of BOD amounted to 3,675 pounds per day and the design was intended to produce a reduction of 90 percent in BOD and 92 percent in suspended solids. This was allowing for a reduction of 35 percent BOD in the primary clarifier.

The design of the filter requires a minimum application of at least 1.5 mgd which is maintained by means of an automatically controlled re-circulating pump. This pump takes suction from the effluent of the final clarifier and discharges into the head box of the filter. The filter was designed for a BOD loading of .084 pounds per cubic foot of filter medium on the basis of the raw sewage containing 330 ppm. The actual BOD of the combined sewage is approximately 410 ppm, and the actual filter loading about 0.1 pounds per cubic foot.

The distributor is driven by reaction of the sewage. The application is continuous and rain-like. Exhaust blowers are provided to assure sufficient circulation of air through the filter.

Filter flies have given no trouble during operation of the distributor. They breed in the filter but are swept out to the final clarifier by the continual flow of sewage. However, if the distributor is stopped for a short while they come to the surface and soon begin to fly.

The design provides interconnected effluent lines between the old and the new plants so that sewage can be readily transferred from one to the other in case of breakdown. Between the two is a by-pass line into which effluent from any unit can be discharged. This flexibility of operation has already proved its usefulness at times when a unit has to be out of service.

The final clarifiers are similar to the primary clarifiers except as to size. They are designed for 2 mgd at 3 hours retention. The equipment is provided with skimmers, which have proved to be quite necessary.

Sludge drying beds are provided for both the old and new plants. They are 20 feet by 125 feet with concrete bottoms and sand and stone filter media. The old plant has 10 and the new plant 6 beds.

An additional sludge digester having a floating cover of the Downes type was installed. The sludge digesters and pumps are interconnected in such a way that pumpage can be made from any sedimentation tank to any digester. The gas which is collected from all the digesters is used to heat the digesters and the operating house in the winter. Excess gas is burned on the outside.

In operation, the new plant has proved quite satisfactory and the quality of the effluent is reasonably near what was expected in the design. The average of the first five months of operation of the enlarged plant is given below and shows results obtained in the new part of the plant and those obtained from the old.

The average flow to the plant during this period was 3,550,000 gallons per day which was divided between the two plants, approximately 60 percent to the older plant and 40 percent to the new. This is their relative capacities.

	Raw	*Settled*	*Filtered*	*Final*	*Percent Reduction*
NEW PLANT					
BOD, ppm	441	235	111	83	81.2
Suspended Solids, ppm	294	101	69	45	84.7
Total Solids, ppm	650			358	44.9
OLD PLANT					
BOD, ppm	386	231	108	83	78.5
Suspended Solids, ppm	293	106	87	54	81.6
Total Solids, ppm	668			396	40.6

It will be noted from the above figures that the purification obtained through the two portions of the plant are nearly the same, with some improvement in the new plant.

Engineers on the project were the Harwood Beebe Co., of Spartanburg, and the general contractor was Fiske Carter Construction Co., also of Spartanburg. Grit collector equipment was furnished by the Dorr Co., clarifier and filter equipment was from the Chain Belt Co., and the Downes floating cover by Pacific Flush Tank Co.

NHA Establishes Urban Development Division

An Urban Development Division has been established in the Administrator's Office of the National Housing Agency, replacing the Urban Studies Division. This Division is undertaking to keep in touch with urban planning and urban redevelopment proposals, with particular references to housing, and the various branches of NHA. Bulletins are issued from time to time and also Abtracts of published materials from various American and foreign sources. Jacob Carne is Director of the Division, and the staff includes G. Holmes Perkins, Earl von Storch, Winters Haydock, Werner Ruchi, Reginald Isaacs, James McCreary, Mrs. Edith P. Hinrichs, and a number of consultants, including I. S. Shattuck and Ralph C. Limber.

Inquiries may be addressed to Mr. Crane at 1600 Eye Street, Washington 25, D. C.

How the Wilmington, N. C., Water Department is

Keeping Up With the Demand

serving both increased population and new vital war industries

By J. FRED RIPPY, JR.
Administrative Assistant

THE construction of water supply improvements for the City of Wilmington, N. C., developed into an interesting almost nip-and-tuck race between our engineers and contractors on one side, and our zooming wartime population on the other.

In 1940 our population was a modest and inconspicuous 33,407. By 1942, estimates showed that it had boomed to 60,000. Not only did large Army camps spring up, but also the North Carolina Shipbuilding Company started its vitally important construction, employing by the middle of 1942 more than 20,000 workers. Close to 6,000 new housing units went up, built by the Wilmington Housing Authority alone, to care for these workers and to help house the overflow of Army personnel and their families. The population trend spiralled upward to a point where ration book distribution indicated more than 100,000 persons in city and environs which once comfortably accommodated some 45,000.

Expansion Need

This rapid change, as might well be expected, brought with it an urgent need for increased facilities of all sorts. Not the least urgent of these was the need for expanding the little waterworks plant, built in 1881, rebuilt in 1910, and added to from time to time as the need for moderate expansion arose.

Daily consumption figures indicated how great the need for new water facilities actually was. In 1940 the average pumpage per day was 2,487,000; in 1941, 2,841,000; and in 1942, 3,560,300. By 1943, daily pumpage had reached 4,274,600, thus edging dangerously over the plant's rated capacity of 4,000,000 gallons per day.

Lanham Act

Consequently, the government stepped in a little more than a year ago through the medium of the Lanham Act to help build a new 7 mgd plant. The program was financed 60 percent by the FWA and 40 percent by the City of Wilmington, since it was clearly evident that the necessary expansion was largely attributable to the war.

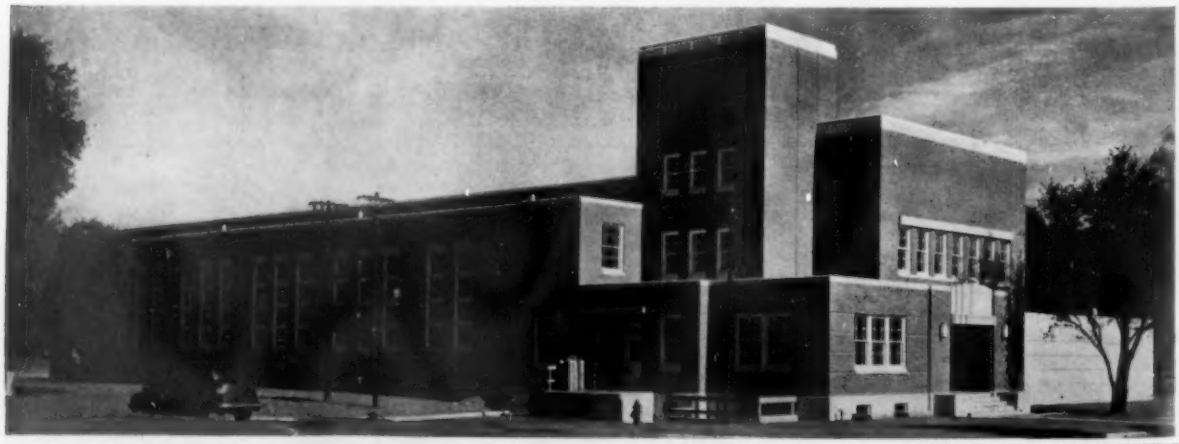
In addition to the filtration plant, elevated storage was considered essential for reserve purposes and pressure regulation. However, the shortage of materials held this part of the project in abeyance in favor of a 4,000,000-gallon concrete clear-water reservoir, now contemplated for construction. In addition, water main extensions were necessary to serve newly-developed areas in and around the city. Then there was an unusual factor present which called for a 22-mile extension of the city's raw water supply line to a point sufficiently far from the coast to free the city's water supply from periodic salt infiltration. This problem of salty water arose whenever the flow of fresh water down the river was insufficient to keep tidal waters from coming up the river as far as the city's intake and could be expected during unusually dry autumn seasons, making drinking water unpalatable.

The new plant is an excellent example of engineering ingenuity in the face of crippling priority restrictions. Designed by William C. Olsen, Consulting Engineer, Raleigh, N. C., and built under the general supervision of City Engineer J. A. Loughlin, it is housed in an attractive brick building. Wood sash and doors, ladders, stairways and railings are used throughout —built, however, so that they might be replaced after the war by more permanent steel units if desired.

Treatment

When the water enters the new plant, it is conditioned with lime, alum, and periodically with activated carbon. Lime dosage is adjusted to raise the pH to approximately 9 while the alum is fed at a rate of 1½ grains per gallon for optimum flocculation. Wallace & Tiernan volumetric chemical feeders supply this treatment. Mixing is accomplished in a Dorr flocculator with clarification in 7 hopper-bottomed settling basins that give a 2-hour retention period.

Each of the settling basins connects to a Roberts filter constructed with



PHOTOGRAPH BY JOSEPH W. MOLITOR

This shows the attractive job that designers can do despite the restriction of priorities.

ABOVE: *The principal pumping equipment of the Wilmington, N. C., water system. Note the absence of an overhead crane — a war casualty.*

BELOW: *A battery of four chemical feeders supply the necessary coagulants.*

ABOVE: *The control equipment and filters.*

LEFT: *The hydraulic valves govern the flow through the filters.*

BELOW: *A close-up of one of the Morris pumps.*

PHOTOGRAPHS BY JOSEPH W. MOLITOR

Wheeler false bottom underdrains. Darling hydraulic valves and Simplex rate-of-flow controllers govern this operation. The filters are supplied with a surface wash to help in the cleaning.

Before going to the mains, the water is given a chloramine treatment. Two new Wallace & Tiernan chlorinators feed approximately 70 pounds of chlorine and 6 pounds of ammonia per day into the water, providing a residual of around 0.3 ppm.

New Pumps

Two main pumping units have been supplied to pump the water into the mains. These are one 5-mgd and one 3-mgd Morris centrifugal pump powered by reconditioned Westinghouse motors. The pumps operate against a 200-foot head. A 300-hp motor drives the larger pump while a 150-hp motor is connected to the smaller. For standby service, in case of electric power failure, a Sterling gasoline-driven engine and pump combination has been moved up from the old plant.

Total estimated expenditures for this program ran to a little more than $2,600,000. This includes the river pipeline and pumping station, and distribution mains in the city. In April 1942 the city of Wilmington issued $525,000 in 40-year serial bonds at an average interest rate of 2.66 percent to pay for a portion of its 40 percent share. In October 1943 an additional $300,000 of 38-year serial bonds was issued at an average rate of 1.88 percent. The final $300,000 was issued in June 1944 at the most favorable rate of interest in the history of the city (1.74 percent), bringing the city's financial outlay in the program to $1,125,000.

New Record

On December 16, 1943, during an unusually severe freeze, the new plant successfully pumped over 6,200,000 gallons of water in 24 hours to set a new pumpage record. Thus the new plant was completed just in time. The old plant could not have supplied this unusual demand. The old plant is being held in reserve for emergency use to give Wilmington a possible pumpage capacity of 11,000,000 gallons per day, when the new raw water supply line is completed.

In the meantime, work continues on the laying of the pipeline to the new intake and water pumping station. By September the line should be completed with the intake above the dam where there is no further likelihood that tidal action will affect the city supply.

The material of which the pipeline is constructed is Lock Joint cylinder-type reinforced concrete-pressure pipe, the only exception being flexible-joint cast iron pipe which was used for the crossing of the Cape Fear and Livingston Rivers. The pipe is manufactured at a temporary plant erected at Navassa, N. C., within easy trucking distance of the entire pipeline.

At the maximum anticipated pumping flow of 15 mgd, the pressure on the pipeline will vary from 170 to 285 feet. The line, however, is designed for a maximum pumping head of 435 feet, should it ever be needed in the future, so that a total flow of 19½ mgd could be attained.

The terrain through which the pipeline is laid appears generally flat and for the most part is covered with scrub pine. However, during the heavy rains which have been occurring for the greater part of the installation, it was observed that the ground actually formed a series of basins and in several places it has been necessary to put the excavation pull shovel on mats even in what appeared to be perfectly level country, because water rose to depths of 6 to 8 inches above the general ground level. The installation of the pipe is being carried out by a Northwest pull shovel digging enough trench for a 16-foot length of pipe, laying it in the trench with the same machine and then backing up to repeat the operation, a single crew on good days laying more than 500 feet of 30-inch-diameter pipe. In the swampy areas adjoining the river crossings and creeks, the pipe is laid on pile bents with timber trestles, one bent for each 16-foot length of pipe.

Part of the new 22-mile line that will connect to the new source of supply. The pipe is Lock-Joint and will furnish water at the rate of 5 mgd under pressure of 170 to 285 feet.

Thus did the expansion of this southern city's water facilities take place to enable it to serve its increased population. These added facilities will be of much value to the city in post-war years. The replacement of its antiquated water plant is an important step in enabling Wilmington to compete on a par with other southern cities for new industry. It is likewise a valuable move in an effort to keep those industries which wartime circumstances have placed in Wilmington.

Bringing the Country Into the City

POINTING out that efforts to correct the lack of adequate open spaces in cities are complicated by a divergence in public opinion on whether it is better to concentrate on the development of numerous small, isolated parks and playgrounds or to create extensive systems of encompassing parks, *Tomorrow's Town** devotes its Summer Issue 1944 to a discussion of this problem.

The preponderance of opinion appears to be that both are needed to the greatest extent practicable. Although recognizing the difficulty of extending large park systems into congested areas, it is argued that the belt system of parks affords more park frontage to more people, and by actually bringing the country into the city fills an urban need which the small park cannot meet.

It is pointed out that a good start toward such peripheral park systems can be and in some cases has been made by ultilizing for park purposes ravines, water courses and other natural features.

Contributors to the discussion are Maj. Gen. U. S. Grant III, Chairman of the National Capital Park and Planning Commission, Washington, D. C.; H. B. Dunnington-Grubb, of the Advisory Technical Committee of the City Planning Board, Toronto; William Stanley Parker, Chairman of the Boston City Planning Board; and Robert B. Mitchell, Executive Director of the Philadelphia Planning Commission.

General Grant describes one of the outstanding examples of peripheral park systems in North America which has aided property values and drawn many residents to Washington. Mr. Dunnington-Grubb explains Toronto's plan to utilize a series of gorges for an inner park system and to limit the city's inner growth by establishing a surrounding agricultural belt. Mr. Parker tells of Boston's pioneering efforts toward a connected park system by utilizing the banks of the Charles River and other natural features. Mr. Mitchell questions the wisdom of rebuilding obsolete areas for high intensity use without considering the need for more bordering unbuilt space.

* Periodical publication of the National Committee on Housing, 512 Fifth Avenue, New York 18, N. Y.

Diesels Buy War Bonds for Wells, Minn.

By T. J. MALONE

IN thirteen and a half years of operation the electric light and power plant of Wells, Minn., has, in addition to paying in full its own cost of around $175,000, contributed from earnings a total of $120,000 toward wiping out other village indebtedness. Of this amount, $44,000 went to retire bonds still outstanding on the old steam plant which the present plant replaced, $52,000 for street sewers, $8,000 for paving, and $16,000 to cancel a long-time village carryover. With all debt written off, as by a fairy godmother, $30,000 has been transferred to the village from plant surplus for the reduction of taxes.

These pay-outs plus the war bond surplus come to $476,000 which is $190 for every man, woman and child in the town.

Heavy Demand

Expanding industries in Wells account for a present heavy demand for power service. A large produce plant, dealing in eggs, chickens, ducks and turkeys, with a hatchery said to incubate a million chicks a year, needs much power for its refrigeration and temperature-control systems. There is another hatchery, too, and a cannery, two grain elevators and a hemp factory. The cannery, which has processed only corn and peas, expects to can other vegetables as well, and so will require more power. A rural electric cooperative serving several hundred subscribers gets its power from the Wells plant. The government-owned hemp factory, located outside the village, is a member of the cooperative. With these war-serving industries manned to their limit, there is a housing shortage in the village. A 50-trailer housing group is to be erected within the village, under federal housing authority, to provide homes for workers. It will get electric service from the village electric light plant.

In 1930, an old steam plant in Wells in use since 1895 (low-pressure boiler, reciprocating engines) was replaced by three Fairbanks, Morse & Company Diesel generating units, with a change from D. C. to A. C., as follows: a 120 HP Model 32C, a 240 HP Model 32C, and a 300 HP Model 32C, each with Fairbanks-Morse auxiliary equipment. Six years later a fourth Fairbanks-Morse Diesel engine was installed, a 600 HP Model 33D, with auxiliaries.

Wells, an alert village of 2500 in southern Minnesota now observing its seventy-fifth anniversary, owes to its municipally owned Diesel electric light and power plant the fact that it is not only out of debt but has a surplus which includes $151,000 in war bonds.

What of their operation? For 1937 the kilowatt-hour volume produced was 891,500; the per-kilowatt-hour cost was 1.65 cents, including all sized charges—as against 2.35 cents in 1930, when operating in part with steam. In 1943 the volume was 2,262,300 kilowatt hours and the unit cost 1.24 cents, including fixed charges.

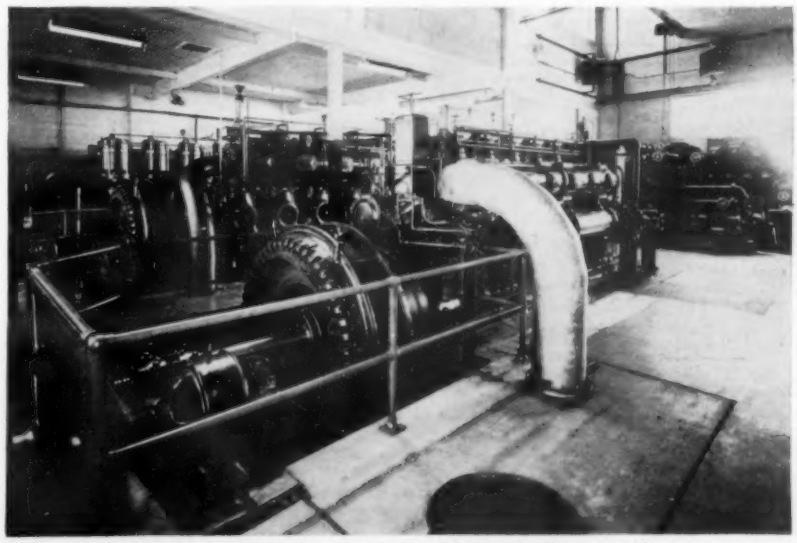
The 240 HP and 300 HP Diesel engines were made over recently by putting in new-type cylinders and pistons, with a 10 percent increase in efficiency as a result. Cost of the remodelling was paid for readily out of plant earnings. Other Fairbanks-Morse equipment installed in the village includes two turbine pumps which draw the water supply from deep wells.

"Any special problems in operating the Diesel equipment?" was asked of Fred Leider, superintendent of the power plant since 1922. "None," he replied. "The plant is efficient. Fuel cost is low. For what it cost in coal to produce a half million kilowatt hours with the old steam plant we now get 2,000,000 kilowatt hours with fuel oil. Our main concern is to serve our heavy demand. We are always pushed. Two engines, the 240 HP, and the 600 HP, are kept running about 18 hours a day."

Appointees to the three-member water, light, power and building commission are retained term after term. J. C. Kirschner, Chairman, 80 years old, has served for 22 years. N. T. Nelson, the first white child born in Wells—in 1871, when it was "Indian country"—has served more than 20 years. G. H. Ellig is the junior member.

"Quality" Town

A stranger driving through Wells and noting its paved streets, its numerous churches and its beautiful high school would know at once that here was a "quality" town. Which goes far towards explaining its success with the power plant. Its people have not been divided by factionalism. They pull together. When they assign a good man to a public responsibility they stand behind him, back him up, give him a free hand and keep him on the job.



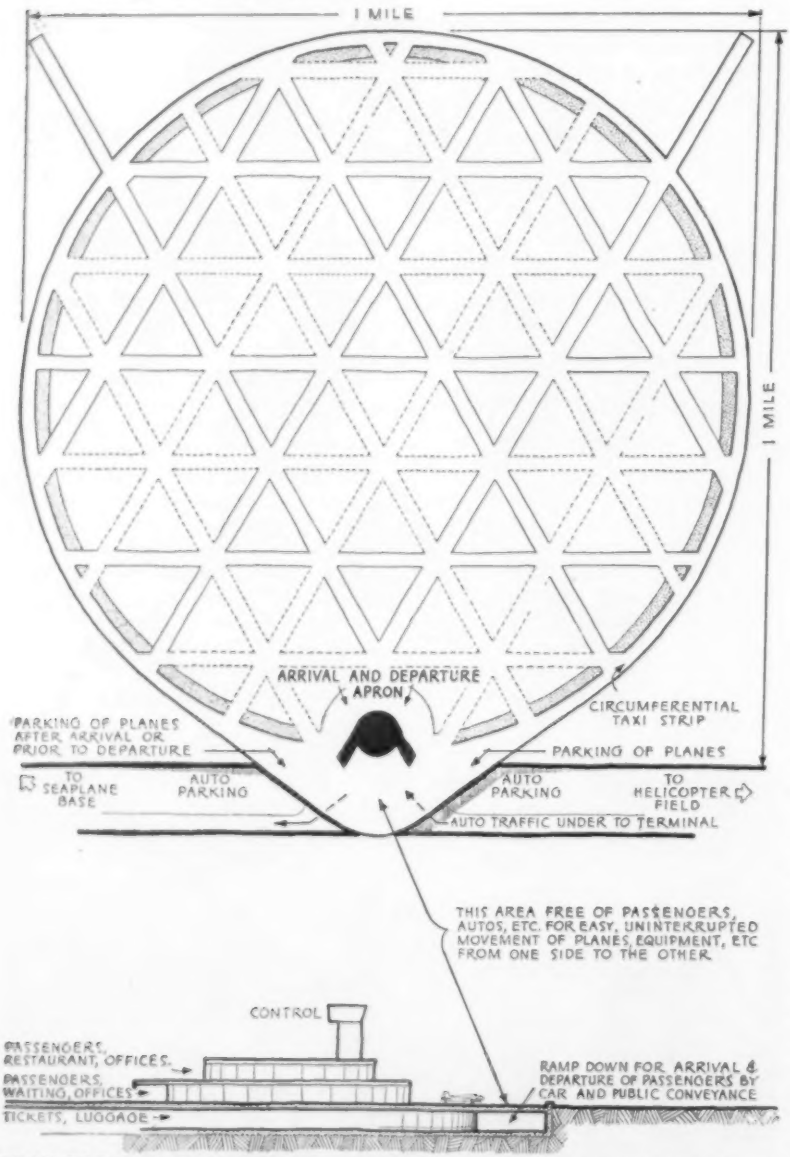
This is the interior of the Wells, Minn., diesel power plant

Will Cities Come of Air Age?

A Continuation of the Study on Airway Centers for Important American Cities

By MAJOR ALBERT MAYER

Major Mayer, a member of the New York architectural firm of Mayer and Whittelsey, is now in the Army Air Corps Engineers and has been active in the planning and construction of airports here and abroad. PART I of Major Mayer's article appeared in last month's issue of THE AMERICAN CITY.


1 MILE
1 MILE
ARRIVAL AND DEPARTURE APRON
CIRCUMFERENTIAL TAXI STRIP
PARKING OF PLANES AFTER ARRIVAL OR PRIOR TO DEPARTURE
PARKING OF PLANES
TO SEAPLANE BASE
AUTO PARKING
AUTO PARKING
TO HELICOPTER FIELD
AUTO TRAFFIC UNDER TO TERMINAL
THIS AREA FREE OF PASSENGERS, AUTOS, ETC. FOR EASY, UNINTERRUPTED MOVEMENT OF PLANES, EQUIPMENT, ETC FROM ONE SIDE TO THE OTHER
CONTROL
PASSENGERS, RESTAURANT, OFFICES
PASSENGERS, WAITING, OFFICES
TICKETS, LUGGAGE
RAMP DOWN FOR ARRIVAL & DEPARTURE OF PASSENGERS BY CAR AND PUBLIC CONVEYANCE

PLAN FOR LARGE AIRFIELD BY J. GORDON CARR, A.I.A., PUBLISHED IN THE *ARCHITECTURAL RECORD* FOR JULY 1943

Although Major Mayer disapproves of this type of construction, on the ground that its curved form slows up taxiing and is hard on pilots and tires, its advocates claim that multiple, parallel runways permit the arrival and departure of several ships simultaneously, since the circumferential taxi-strip makes it unnecessary to use runways except for short periods when ships are landing or taking off. Except for the terminal building itself, no buildings are at the field to interfere with the use of the runways, taxi-strips, or general activities of passenger service..

PART II

How Many Airports per City?

Our major air cities will ultimately need somewhere between two and four main passenger airports; feeder or local airports (depending on whether these are incorporated into the main fields or are developed separately); one or more mail-cargo airports; airports for private flying, where also instruction schools should be located. The Chicago Plan Commission's proposals seem to err on the optimistic side, but the kind of thinking it represents is along the right lines. Secondary cities need fewer main airports, grading down to the minor cities requiring an airfield for scheduled planes, and probably an extra one for private flying. The other functions—mail and cargo—can probably be accommodated in these fields. For a secondary city, the explorations already made, and the plans being made in Denver are well worth consulting.* In its sphere this seems more realistic than the Chicago proposals.

The Airfield Itself

What about the airfield itself, and the buildings and facilities on it? The increased areas and runway lengths have already been discussed; also the probable limits to the control capacity of a single field. The greater body of experience of dense flying, of minimum interval between take-offs and landings, has been accumulated at military airfields, as few if any municipal airports have yet been stretched to the limit. From such experience it would seem that anything beyond dual runways introduces a density of flying, a close-up of interval, a strain on the control tower, that will interfere with maximum safety. It also seems clear that peripheral taxiways, with their many bends or curved form, slow up taxiing excessively and are too hard on pilots and tires. Very complicated patterns have been proposed, and are under actual construction, which look ingenious on paper, but whose operation will involve retarding complications. For instance, if the taxiways from one runway cross a parallel run-

* See *Denver*, official publication of the Denver Chamber of Commerce, August 19, 1943.

way anywhere but at or beyond the ends, actual capacity of the two will be substantially less than twice the one. Also, planes landing or taking off from the runway so crossed, and those taxiing across it, will lose precious time. Such complicated proposed patterns as those shown below are unsatisfactory.

The simple dual triangle with two taxiways, as shown, in accompanying illustrations, presents in diagrammatic form, about the limit of capacity for economical, safe, expeditious operation. Anything much beyond that seems to be a pipe-dream, whether it is built or not.

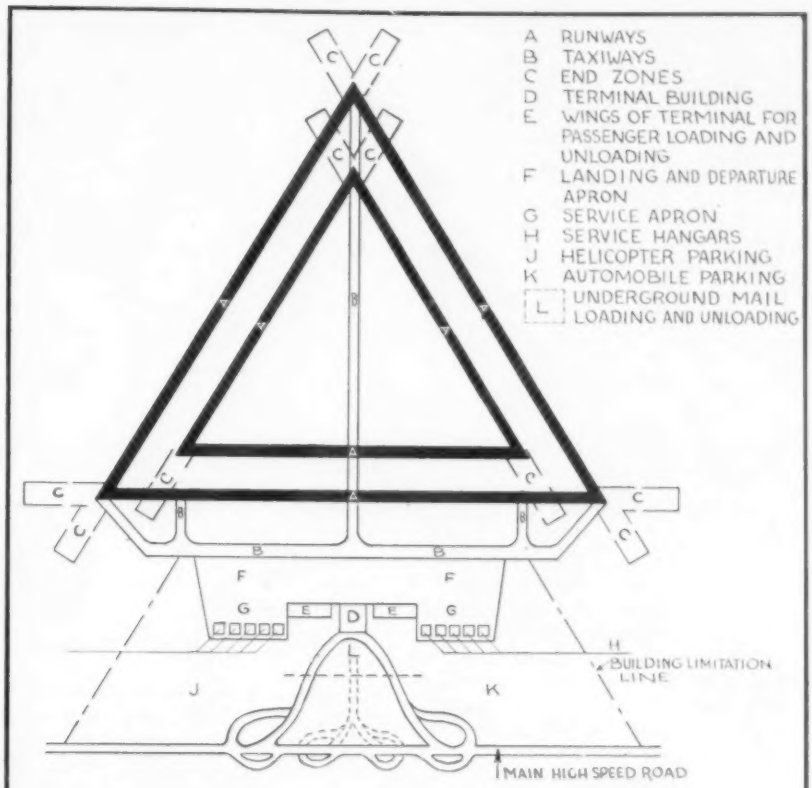
Lessons from Military Experience

In planning for adequate and adequately expansible airfields and services, military experience in training fields and especially in air transport should in some way be brought into useful focus, as they have had the maximum experience with really dense air traffic and its servicing. However, it must be observed that post-war civilian air problems differ in two respects: first, in that the problems are far more diverse, involving passengers, luggage, mail, freight, scheduled and unscheduled flights; second, that in a war, supply is paramount, cost secondary—while comparative competitive economics with other forms of transport is the very key to the future of civilian air transport.

The location of service and parking hangars in civilian airports has hitherto been more or less haphazard. Their location should meet two criteria: first, they should be near the portion of the land apron where passengers (or mail or cargo) are loaded and unloaded, so as to spend a minimum of time to and from; second, they must be out of the way of loading and unloading operations, refueling, etc.

Design of Airport Buildings

In the passenger airport, there must be much more careful separation of functions and of streams of traffic than is generally the case at present. A passage or wing at each end of the terminal building, from which planes are boarded, and through which passengers and luggage are taken to waiting buses or taxis, keeps a great deal of passenger volume out of the terminal building. In fact, only outgoing passengers need to go into the building itself. All incoming passengers can either go straight into the waiting taxis or bus or helicopters, or walk along the passage to the particular gate from which his next plane is leaving. This system has been successfully used at



DIAGRAMMATIC · DESIGN · OF · MAIN · PASSENGER · AIRFIELD.

LaGuardia Field, New York.

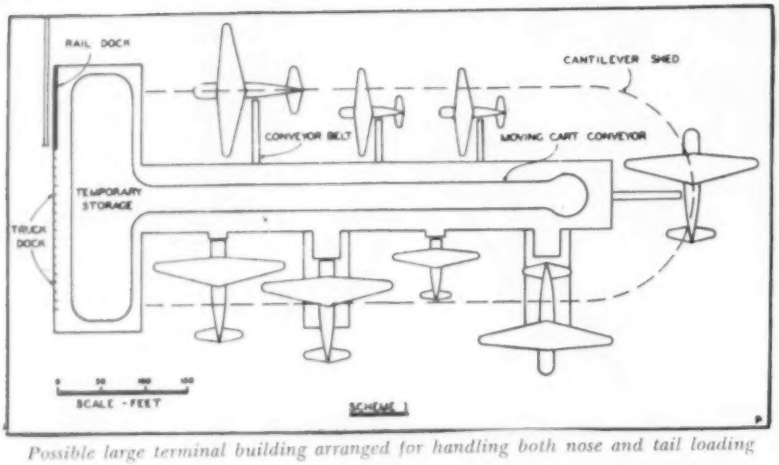
If any appreciable volume of mail or cargo is handled at a busy passenger airfield, these will be handled by some of the specially designed moving equipment such as has been developed for the Air Transport Command, to be delivered by conveyor or lowerator to an underground level, and there loaded onto trucks. By separating streams of passengers from each other, and by separating mail and cargo from passengers, we begin to get an orderly space layout, with most efficient use of space and minimum loss of time.

The concept of the terminal building itself will expand. Adequate provision is needed for those who don't travel by plane, but who merely come to see the drama. A few airports—New York, Washington, Los Angeles—make provision for spectators in special galleries or roof spaces. This can be made a source of revenue, as at LaGuardia. However, the size of the concourse area must take account of them as well. Shops such as are now found in railroad stations and newsreel theaters are naturally part of passenger air terminals; restaurants from which one can enjoy the show already exist at some airports.

Zoning around airports and their access roads will not only limit height, for glide angle, but should prevent uncontrolled ribbon development along roads and around the airfield. A minor settlement will no doubt spring up at an airfield: a hotel, some recreational facilities for use while passengers lay over between planes. However, with high speed connections to the center of the main city and to other cities in the region, there doesn't seem adequate justification for much more. Most business will still do better when grouped with other types in concentrations. The relatively few business offices that might find an advantage in locating at the airfield would be pretty well isolated from the concentration of business which is naturally and profitably grouped in city centers.

Cargo Airfields

Cargo airfields must be designed to accommodate towed gliders, the "flying box cars." Design of cargo terminal buildings has already had considerable study. The practises of loading and unloading, temporary storage, the use of conveyor equipment, are based on similar practice in railway express, with adaptation of layout and design of special lifting equipment to suit the airplane specifically. In smaller cities, even in those with no airport and which originate no great volume, air freight service is possible. Special



Possible large terminal building arranged for handling both nose and tail loading

parachute, hooking and lifting equipment permit pickup and delivery without a plane stop.

Up to this point we have considered the rather restricted problem of arranging for flying facilities with maximum economy and speed. By and large any city that tackles the problem with boldness, foresight and promptitude can fit itself for the air era, without serious disturbance to its present texture, but with forced improvement and coordinated extension of its express highway system. There is a further possibility here. If generous widths are acquired for these peripheral super-highways, so that in effect they become parkways of varying depth, these, together with the multiple airfields required, may mark an important step toward establishing a city's greenbelt.

Ultimate Possibilities

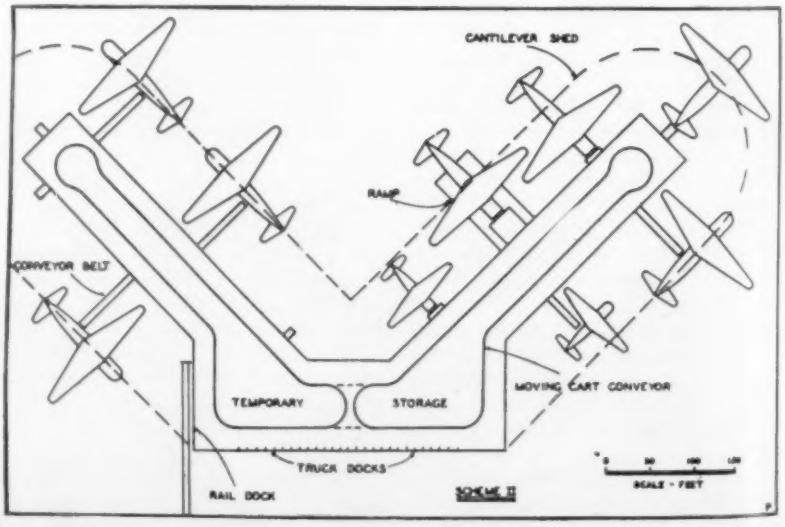
But how will the fact of air travel and its inherent possibilities *ultimately* affect the texture and configuration of cities and their relative importance? We can point out some possibilities, bearing in mind that in so new and dynamic a field, we can't be sure that we visualize them all, or that we visualize their extent. Some presently small and relatively unimportant cities will become important air cross-roads—as, for example, Great Falls or Billings or Missoula in Montana, a natural gateway to the Alaskan air; or El Paso in Texas, a natural air gateway to Latin-America. Such cities not only need to plan at once for air facilities, but should revisualize and press their city planning to provide for the growth in population, business and industry that will come in somewhat the same way as railroad centers grew in the last century—only this time with a vital plan, let us hope, rather than hit or miss, helter skelter. A further effect on cities is likely to be that certain inland cities will benefit at the expense of cities on the oceans. The great circle plane route will, for example, bring Chicago nearer to Japan and Russia than some ocean cities that are nearer by boat.

Effect on Large Organizations

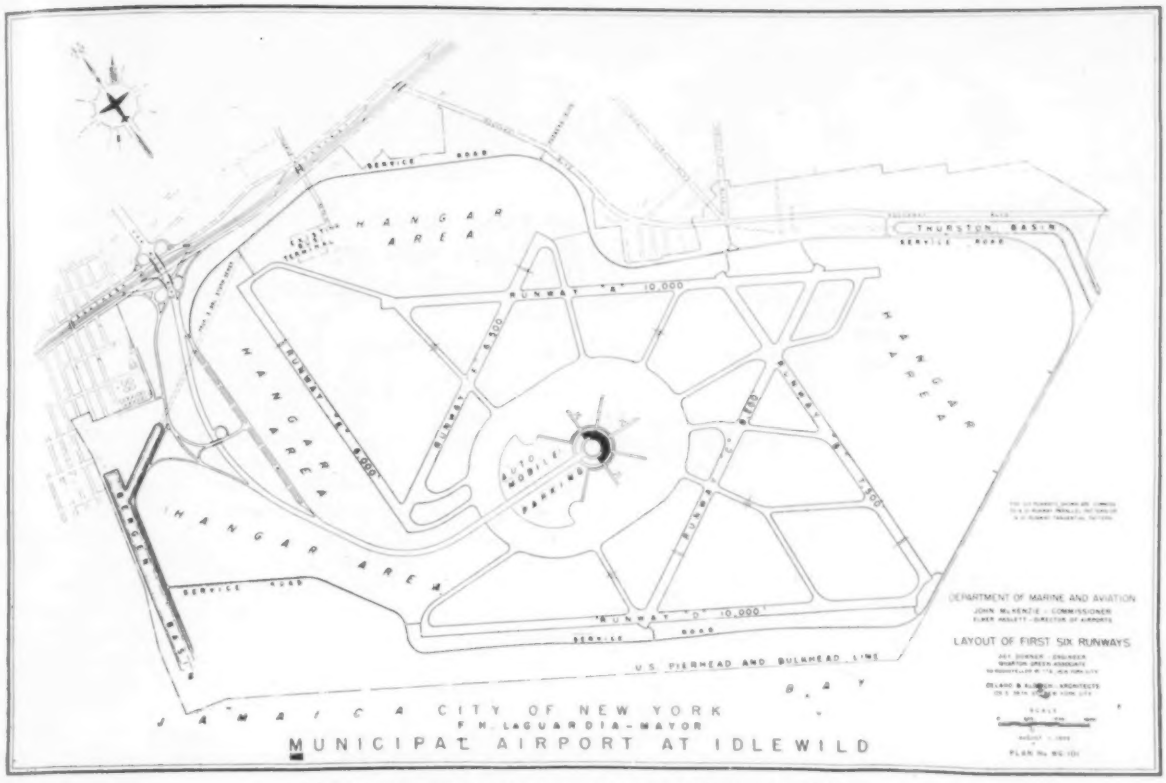
While air travel will cause some dispersion, by increasing the commuting range, by making possible fast frequent deliveries to smaller centers of population and industry—as well as from them—certain factors will work in the opposite direction. As the representatives of big concerns can travel from main office to anywhere in the country in a few hours, there will be a tendency to close branch offices or minimize personnel there, with probably economy in the resulting centralized operation. Similarly, a large accumulation of spare parts for consumer industries, in many smaller cities around the country, may be found unnecessary — or at least much less space may suffice—when such parts can be flown in within an hour or two. Manufacturers in such lines who find it economical to dispense with some warehouses or to diminish warehouse space, may decide to run small airfleets of their own by this purpose.

Decentralization of Cities

The cargo airplane may eventually prove the most revolutionary factor in flying from the point of view of ultimate redistribution of cities, even though its use is restricted to the items of perishable goods, small parts, less-than-carload lots. It may bring about a further decentralization of air cities into regional cities with satellites. As a nucleus, we have many large new war plants, generally placed at a distance from the city, with railroad siding, modern and often specially built highway systems, to take care of the main freight load. These factory nuclei are the last word in design, may be used by post-war industry in preference to the pre-war vintage of plants in cities. In such locations, if we can forestall an uncontrolled post-war building rash, we can readily make a plan by which the new town can be located (diagramatically speaking) all on one side of the plant or plants, permitting airplane landings on the other side adjacent to the railroad siding and to the plant, thus integrating all freight deliveries and shipments. This is an economy and concentration of movement which cannot be duplicated in the central city. It is in the creation of these satellite air-towns that the cargo plane may impose a definite satellite regional pattern, may out of pure technology require well-defined separated satellite communities with ample airfield room instead of a joined-up sprawl of suburbs—social and economic planning concepts which we have tried



A more compact arrangement for a larger terminal, located at the end of a field



PLAN FOR NEW YORK CITY'S IDLEWILD AIRPORT

This airport occupies approximately 4,000 acres. Runways vary from 6,000-10,000 feet in length. It is expected that runways 6,000 to 7,000 feet long will be ample to serve domestic commercial flying of even the heaviest types. However, runways up to 10,000 feet will be required for those few ports such as Idlewild which will handle non-stop transcontinental and transocean flying. The runways are paved 200 feet wide and the taxiways 100 feet wide, of 12-inch thick concrete.

JAY DOWNER—ENGINEER; WHARTON GREEN—ASSOCIATE; DELANO & ALDRICH—ARCHITECTS

so long to attain with little success.

In broad outline, these are the tendencies, and the planning and constructive measures to meet them, inherent in the foreseeable future of the airplane. There is no contention here that the solutions and conclusions offered are exactly those that will work out best. But these are the avenues of discussion and the scope of accomplishment to which cities must immediately address themselves, if we are really to enter an air age. Due to the construction gap caused by the war, and its artificial stoppage of civilian airplane traffic increase, we have the time to consider the tendencies, to think through and solve the problems in a complete way. We have rarely had a similar opportunity at the threshold of a similar tremendous technological and social change, and still more rarely have we responded to the opportunity. Maybe we can do it this time!

A New Start for the Cities

As the fourth of its current series of articles on city planning, *Fortune* magazine publishes in its September issue an analysis by Guy Greer of proposed methods of solving the problem of urban blight and slums. Recognizing the urgent need for a new start for the cities, the article reaches the conclusion that this problem, inherited from the past, cannot generally be solved by local initiative alone, but calls for some form of federal aid.

Perhaps the biggest question mark, in Mr. Greer's opinion, lies in the apparently inadequate size of the proposed operations and the present lack of legal power of the urban communities to operate on a larger scale. On this subject, he says, in part:

"In order to carry out the kind of plans that would really solve the problem of the blighted areas and guide the unorganized decentralization movement, the local governments will require extension and clarification of their legal status in two important respects. Each urban community must be permitted by its state (or states) to bring the entire urban area under centralized planning and under zoning and subdivision control, irrespective of present city limits or state lines. And each must be empowered to buy and then lease or sell land anywhere within the urban area for any purpose that will further the realization of the over-all plan.

"Should the federal advances be utilized to induce the states to grant such powers to the urban communities? Neither of the bills now makes this a condition. But inasmuch as certain conditions must be included anyhow, this one seems indispensable. A somewhat similar method of obtaining state legislation was used with conspicuous success in connection with the U. S. Housing Act of 1937. Following the passage of the act most of the states rushed to enact the laws needed to get federal money flowing into their cities and towns. It is perhaps not the ideal way to bring about a reform in the interrelations of state and local government. But in view of the appalling obsolescence of the existing state-local arrangements and the nationwide character of the resulting problem, such use of the power of the purse might now be justified. The reform would at any rate be carried out once and for all. And this accomplishment—amounting to the removal of the strongest reasons for the local governments to by-pass the states—might tend thereafter to lessen rather than to increase the danger of federal encroachment on the prerogatives of our state and local governments."

Marking the Airways for a New Day in Aviation

is a job that will require the cooperation and initiative of cities and towns throughout the entire nation.

POST-WAR aviation faces several critical problems. One is that of deciding just what the character of this war-bred and war-nurtured aviation will be—how many airplanes will be flying in our skies, who will own them, what their ranges in size will be, and what they will be doing. Another is that of airports—where they will be located, how they shall be designed, and who will be allowed to use them. There is still another problem equally knotty, one that has been with us even before the war began and has not received the attention that it deserves. That covers the provision of adequate markers for post-war air routes.

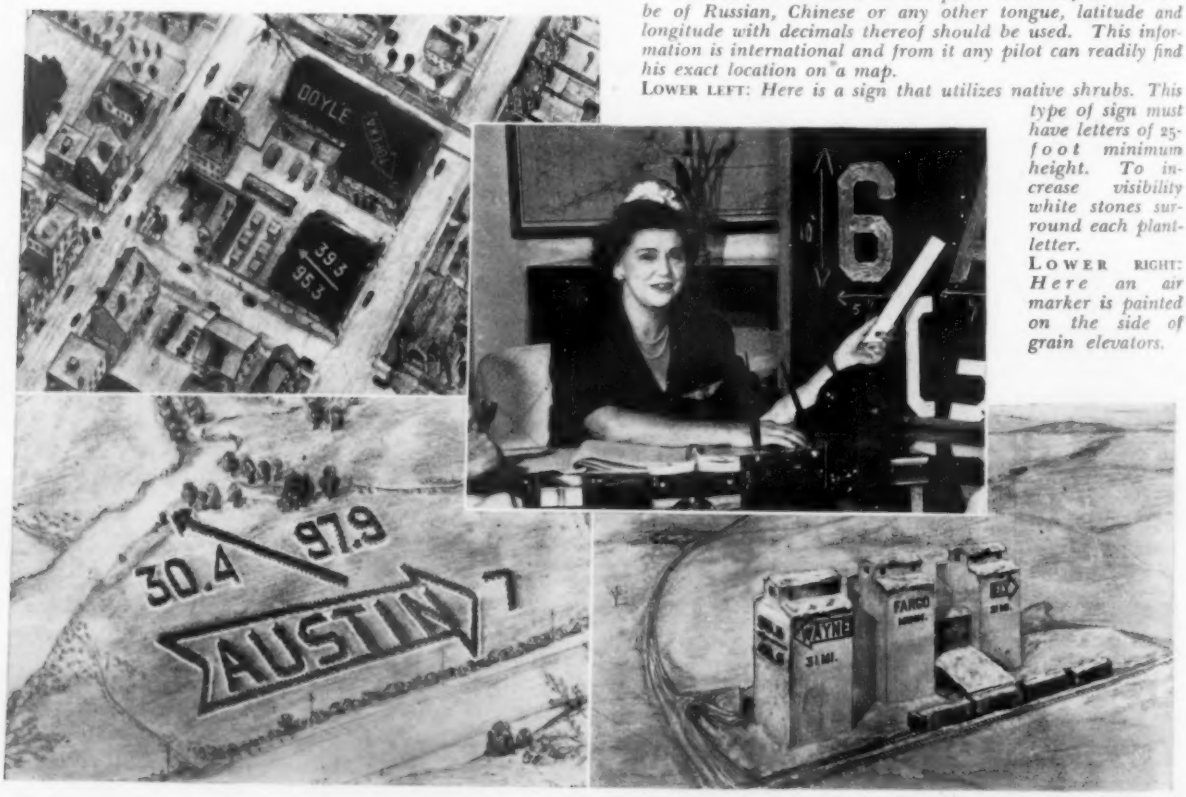
As far as marking of airways is concerned, aviation occupies a position not paralleled by any other means of transportation. Our coastline, our navigable rivers and lakes all are charted with extreme care with markers and buoys carefully maintained. Our highways carry numbers and symbols that allow traffic to circulate confidently in practically any part of the country. But as far as aviation is concerned, unfortunately even the best of our flyers all too often get lost.

Back in the days when the first autos ventured beyond the city limits, invariably the driver would have to ask for directions and even then would frequently find himself on some side road spending exasperating hours finding his way back to the route he was trying to follow. In the sky this problem is intensified by the pilot's uneasy knowledge that he cannot simply drive up to the first filling station and ask for directions. If he is lost, he must first find himself a "filling station," or airport, or risk a costly, dangerous landing in whatever facilities he can discover. Indeed, this fear has caused more pilots to give up flying than any other single factor.

So much for the background; here is what is being done to alleviate the situation and how cities and towns fit into the picture.

In order to provide a system of markers comparable to that now in existence for automobile traffic, the Civil Aeronautics Administration has designed a system of giant markers that an aviator can read easily. These are slowly being accepted throughout the country. They are painted on the roofs of various prominent buildings in cities and towns, or mountains, towers and other strategic places. These markers measure a minimum of

INSERT: *Miss Blanche Noyes, well-known aviatrix in charge of CAA's air-marking program, demonstrates minimum letter sizes for air marking.*
UPPER LEFT: *On the roofs of two buildings is painted an air marker. In order to make the air markers readable to the pilot overhead, whether he be of Russian, Chinese or any other tongue, latitude and longitude with decimals thereof should be used. This information is international and from it any pilot can readily find his exact location on a map.*
LOWER LEFT: *Here is a sign that utilizes native shrubs. This type of sign must have letters of 25-foot minimum height. To increase visibility white stones surround each plant-letter.*
LOWER RIGHT: *Here an air marker is painted on the side of grain elevators.*



10 feet in height and are of an Army yellow on a black background. Tall buildings or groups of buildings are especially well-suited for this. The use of the highways is distinctly undesirable, since the oil and wear of traffic soon obscures the sign's visibility.

This program has, since 1935, been under the direction of CAA's attractive and well-known aviatrix, Miss Blanche Noyes. Miss Noyes' remarkable record of more than 10,000 hours of flight gives her an especially well qualified insight into what the problem requires. Originally, she with Amelia Earhart and four other women pilots started the CAA's air-marking program. At that time WPA financed the work, CAA gave technical advice, and sponsors, such as state aviation commissions, met half the expense. Various oil companies installed hundreds of markers at their own expense.

Since the start of the program, Miss Noyes has been responsible for establishing 30,000 air markers, traveling for CAA from one town to another to aid with air marking. She has averaged 800 hours of flight a year.

Various states have been doing an excellent job in promoting this project. Alabama, Tennessee, Texas, Nebraska, Pennsylvania, Virginia, West Virginia, Illinois, Minnesota, Missouri, Ohio, New York, North Carolina, South Carolina head the list. In Ohio every city, town, and village is required to have a marker by state law. If the city dads fail to put up a sign the state steps in and does the job, billing the town.

Mr. E. V. Fryhoff, of the Aviation Division of the Missouri State Department of Resources and Development, has just initiated a program of air marking for Missouri. In a letter sent to all Chambers of Commerce in Missouri he wrote in part: "—we are asking each [of you] to sponsor an air-marking program for your respective community.

"If you have an organization looking after your aviation interests, we would like very much to offer our cooperation in carrying out the work of air marking.

"This air marking can advertise your town's resources, whether it is a product of a factory, mine or farm, training school (such as 'Columbia, home of Missouri U.'). In many cases private companies will carry out the air-marking program for the privilege of advertising their company or product."

Soon after the frenzied days of Pearl Harbor, the CAA removed all air markers along the United States' coast line to prevent the possibility of aiding enemy raiders. However, fledgling airmen for both the Army and Navy began to plow up corn fields and soft pastures from Maine to Florida and Oregon to California in an effort to get their bearings. Normally patriotic farmers became more than slightly irritated and Miss Noyes was commissioned immediately to put in air guides, those that would really work, to cover an area 50 miles in any direction from training bases.

Miss Noyes is in the Airways Engineering Division, under the Bureau of Federal Airways, Civil Aeronautics Administration, Washington, D. C. She has prepared a bulletin which has just been made available. It contains all the information necessary for laying out air markers and may be obtained on request by writing Airways Engineering Division of CAA, Washington, D. C.

Metropolitan Housing Council Brings "Chicago of the Future" to Chicagoans

By DOROTHY L. RUBEL
Acting Director, Metropolitan Housing Council
Chicago, Ill.

CHICAGOANS, long proud of the research and studies of their Plan Commission, were given their first panoramic glimpse of the city's planning problems and progress when the Metropolitan Housing Council sponsored a comprehensive "Chicago of the Future" exhibition at Marshall Field & Company's State Street store during the last three weeks of July.

Here, along the Seventh Floor Crystal Corridor, the Housing Council brought together and presented to public view for the first time the wares of the official housing and planning agencies, in a bid for popular interest, support, comment, and criticism. Picking up the voice of the people as an aid to carrying out a program of slum clearance covering 23 square miles was the general objective. Cooperation was readily forthcoming from the officials. A committee of architects, headed by Ernest Grunsfeld, Jr., selected educational models, charts, maps, dioramas, and photographs which could be lumped under sections on: The Neighborhoods, The Region, The People, The Slums, The Problems, and Practical Planning.

To introduce the show the Housing Council used the twelve "Look at Your Neighborhood" panels, obtainable from the Museum of Modern Art, of New York, to which two were added specifically related to Chicago problems. Neighborhood redevelopment plans and dioramas; transportation, recreation, population, rent, and conservation studies were loaned by the Chicago Plan Commission. "Before and after" photos and models of rehabilitated slum dwellers and dwellings were loaned by the Chicago Housing Authority, together with original architectural drawings for the nearly completed 1,500 unit Altgeld Gardens project. This project for Negro war workers employed by Republic Steel, International Harvester, and other permanent heavy industry in the Calumet area, attracted much attention as the first attempt of the Chicago Housing Authority to create a completely planned community with shops, recreation facilities, cultural, religious, and educational resources.

Elaborate models of proposed state housing projects were loaned by the Illinois State Housing Board; watercolor maps depicting traffic flow on highways leading into and within the

Department Stores as Aids to Housing and Urban Redevelopment

In almost every city there is an outstanding department store whose aid might be enlisted in some such exhibit as that described in the accompanying article. Here is a field of civic cooperation little cultivated as yet by municipal officials and citizens' organizations, but which might become a potent force for post-war urban redevelopment.

EXAMINING CHICAGO PLAN COMMISSION'S MODEL OF PROPOSED NEW NEIGHBORHOOD, AT THE "CHICAGO OF THE FUTURE" EXHIBITION

LEFT TO RIGHT: *Temple McFayden, Chairman, Illinois State Housing Board; Frank M. Whiston, President, National Building Managers Association; Leo Sheridan; Ferd Kramer, President, Metropolitan Housing Council; William S. Street, Vice-President, General Manager, Marshall Field & Co., State Street Store; Frank Rathje; Paul Scott Mowrer, Editor, Chicago Daily News; Aubrey Mellinger, Chairman, Chicago Plan Commission*

city were contributed by the Cook County Highway Department. Colored charts spotting the geographic distribution of the city's many racial and nationality groups were loaned by the Mayor's Race Relations Committee and the Social Science Research Committee of the University of Chicago. From them, too, came maps showing population trends in the metropolitan area; delinquency, tuberculosis, rents, buildings to be demolished or needing major repairs, and other data. The Institute of Design loaned a large model of a solar house designed by George Keck.

Opening Luncheon

The exhibition was opened with a luncheon and preview at Marshall Field & Company, attended by the press and some 75 business leaders, civic leaders, and city officials. Mayor Edward J. Kelly, General Manager William S. Street of Marshall Field & Company, and President Ferd Kramer of the Metropolitan Housing Council hailed the exhibition as a unique demonstration of the kind of working together needed to fulfill the promise of a greater Chicago of the future.

The main speaker, Professor Louis Wirth, likened the occasion to the 1910 dinner launching the Wacker-Burnham "City Beautiful" plan, to whose lively public support the city is indebted for its renowned boulevard and lake front beautification system.

Metropolitan newspapers, columnists, and trade journals gave liberal support to the exhibition, and were in a large measure responsible for the excellent attendance, which mounted steadily through the closing day. Numerous business, educational, and civic organizations bulletined their memberships urging attendance. A special brochure reproducing some of the panels, explaining the exhibition, and following through with suggestions as to how the citizen might help bring a better "Chicago of the future" into being were distributed free of charge, along with other literature on housing and planning.

Public Reaction

Twenty hostesses, all versed in housing, were recruited by the Women's Joint Committee on Adequate Housing to staff the information desk. The public came, studied, asked questions, and talked. Repeated inquiries about a Master Plan resulted in the addition of the post-war plans for London County, Plymouth, and Coventry to the exhibition through the courtesy of the British Information Services. Numerous visitors urged that the exhibition be made a permanent one in some downtown building: others urged that it be carried to the schools that the citizens of tomorrow might have a hand in making their city of tomorrow.

A department store in another city sent a representative to determine whether something similar could be undertaken in its city. Army personnel, concerned with the preparations for peace, students, educators, ministers, realtors, bankers, planners, architects, social workers, housewives, tradespeople came to learn what was being planned, or what the business of planing was all about.

Practical questions and personal questions were asked as to who would pay for rebuilding the slums; how long would it take; who would benefit other than "the poor"; where would the people be housed in the transition period betwen demolition and reconstruction. Manufacturers doing their post-war planning now came to learn where single-family homes would be built, of what sizes and what price ranges. Small property owners came to get help in deciding whether the plans for their communities made it desirable to hold on or let go.

Recommended Action

All participants in the exhibition considered it extremely rewarding. The Metropolitan Housing Council, sponsors, found in opening a channel between citizens and planners needed action might be expedited for carrying out recommendations that:

1. Planning be placed on a regional basis. (The Plan Commission is at present empowered to plan only for the city proper.)
2. Legislation be supported which will facilitate large-scale land acquisition.
3. The State Constitution be revised or amended to lift part of the intolerable tax load from the back of real estate.
4. The city building code be amended to permit the use of modern materials and methods.
5. State laws be passed to enable insurance companies to invest in large scale housing projects.
6. Minimum health and safety standards be enforced to eliminate profiteering in slum housing, and prevent owners of such properties from holding out for exorbitant sales prices when actual clearance gets under way.

It is hoped that a second, larger, more impressive, more far-reaching exhibition may be presented under the Housing Council's auspices within the year.

War Memorials

A report of the survey of trends in war memorials made by THE AMERICAN CITY will be published next month. Those having unsolved problems or seeking suggestions for memorials are invited to write to the Editorial Department, THE AMERICAN CITY, 470 Fourth Ave., New York 16, N. Y., for information on solutions to similar problems that are being found by other communities.

Equities in Housing

A Clue to Securing Urban Housing in Adequate Amounts

By ARTHUR C. COMEY
Consulting City Planner
Cambridge, Mass.

IN the long run only three types of equities in housing will be found to be socially advantageous and successful: on the one side, occupant ownership of individual dwellings, for those able to be home owners to their advantage, which might eventually constitute 40 to 60 percent of all urban homes; on the other side, public ownership, primarily of multi-family dwellings, for those with sub-standard incomes for their needs, say, 5 to 10 percent of all urban homes; in between these extremes, community cooperative ownership, primarily of group dwellings, about 40 to 50 percent of all urban homes, meeting the needs of the great middle group with moderate incomes, now chiefly housed by renting from private landlords.

Means for providing an adequate number of homes to be occupant-owned has now been developed, chiefly through the Federal Housing Administration.

Means for providing publicly owned homes has also been worked out, chiefly under the Federal Public Housing Authority.

Now is the time to complete the coverage, by providing adequately for the middle group. While not precluding use of a host of other methods of financing for this group, the normal procedure, to be departed from in so far as local conditions require, should be a somewhat decentralized one, as follows:

How Community Housing Cooperatives Might Be Organized

Each community should, as a rule through its Housing Authority, set up a Community Housing Cooperative, a quasi-public corporation, with its own directorate or board of trustees. The community should provide, initially at least, the management of the Cooperative, and earmark for its use funds equal to 10 (or 15) percent of the total cost of the prospective housing, plus any amounts deemed to be appropriate as a subsidy (to be later marked off) to cover any excessive cost for cleared sites approved for the housing above their reasonable value for the housing density found to be appropriate—as may be typical in slum clearance. The community, through its Housing Authority, should receive shares of equity capital stock equal to this 10 (or 15) percent of the prospective total cost.

All the remaining funds necessary to construct (or acquire) the housing should be raised through credit capital. The bonds for this should be guaranteed, first, by mortgage; second, if deemed wise in order to secure a low interest rate, by the municipality; and, third, in the course of time by a mutual insurance system throughout the nation, similar to that now in effect for Federal Building and Loan Associations. These bonds should be retired at a rate not less than the rate of amortization deemed to keep pace with depreciation and obsolescence. It is believed that these bonds will be more attractive to such types of investors as insurance companies than would be equities in housing, with their attendant risks and responsibilities. On the other hand, private enterprise may be given adequate scope in the constructing of this housing, a most appropriate field for private enterprise, on a large scale.

Occupants as Shareholders

After the dwellings in a Community Housing Cooperative are constructed, their occupants will automatically become shareholders through small amounts included in their monthly payment for the dwelling they occupy over and above the total equivalent rental cost of the dwelling, including therein the amortization of the bonds above referred to. After a period of, say, one year the equity in the hands of the occupants should entitle them to minority representation on the directorate of the Cooperative. After a period of perhaps 12 years each occupant head of a family should have accumulated equity shares equal to the original equity subscribed by the community for his dwelling unit; the community's equity having been progressively retired at the same rate or else re-earmarked for additional housing developments elsewhere in the community. When this occurs, the occupants should be entitled to elect, say, one-half of the directorate of the Community Housing Cooperative—or, if deemed sound, some greater proportion but probably never the entire directorate. The equity shares do not need to be entitled to any ordinary cash dividends at all, though it may accord better with current habits of thought, so to set up the balance sheets that they may receive up to 3 or 4 percent cumulative dividends: any net surplus to be devoted to lowering subsequent payments, providing additional community services, or other common benefits.

As a refinement the equity shares may be subdivided into series, each series designated perhaps by a letter, to be tied to a small neighborhood, perhaps as small as both sides of a minor street a block long; and a considerable degree of decision in local matters may be delegated to the shareholders in each series—that is, to the group of occupants of each small neighborhood, acting as a local Homes Association.

If an Occupant Moves

If an occupant transfers to another dwelling in the same Community Cooperative, he may be authorized to carry his equity shares with him. If he transfers out of the Cooperative's housing altogether, he may be entitled to receive back cash in monthly installments at the rate that he had paid

The Case for the Community Housing Cooperative

In the opinion of the author of this article, the Community Housing Cooperative affords the most advantageous method, both socially and economically, of providing adequate urban housing for families in the middle-income group.

"It meets the situation both where a substantial permanent subsidy for the occupants' benefit is deemed advisable—chiefly in rebuilding of slums or blighted areas—and where only a temporary revolving fund is necessary to secure adequate amounts of standard housing—chiefly on vacant land (or where existing dwellings are to be brought within the scheme)."

for his shares. Funds for these repayments will normally come from the simultaneous in-payments of the next occupant. Incidentally, this repayment cash would enable the payee to buy shares in a similar Cooperative in another city.

If there are more than nominal vacancies there will be a net loss, to be sustained in the last analysis by the equity shareholders. But they would really pay for such losses under almost any other financing scheme, for private operators would protect themselves against such risks by higher charges, which they would under ordinary conditions appropriate to themselves as a profit of one sort or another.

It is in contrast to such methods as this last, and to the many devious forms of subsidy, the inefficiencies of complex controls, the guaranteeing of substantial cumulative dividends, and the like, that this direct method cuts straight through from the community's efforts and stake to the occupants' benefit. The Community Housing Cooperative is thus seen to offer the greatest beneficial returns and the probability of being so generally utilized as to produce the greatest number of good homes for the great middle group of our people.

Hemispheric Cooperation in

Building American Cities

IN his valuable book "The Cities of Latin America" (reviewed in the August issue—p. 111) Francis Violich brings a fresh understanding of the creative approach to city planning and building characteristic of many of the larger cities of Latin America. In his observations, he is constantly aware of the interrelations of our two American continents and the potentialities for mutual benefit. The following excerpts are from his book:

People have asked me many times, But what can we learn from the Latin American cities? Where else in the world are there cities like New York or Chicago? Have we not the skyscrapers, the speed of the subway, the efficiency of new freeways, and homes for millions? It is probably true that we have demonstrated the highest technical skill in the construction of our cities, but it is also true that we have shown disregard for the human being *in relation to the potentialities of that technical skill.* Daily, we ignore the costliness of built-in congestion, the permanent gloom of canyon-like streets, the inhumanity of profitable slums, the noise and unwholesomeness of crowded subways and street cars, the lack of trees, plants, and green spaces in large cities and small industrial towns. Our technical skill and our ability to provide facilities for living well have given us the greatest opportunity that any civilized group has ever had to build cities free of these urban fallacies. We haven't done so. We have done the reverse. We have used our technical skill only to make habitable and sanitary to a tolerable degree—but no further—these intricate mazes which we call our great cities.

We have made the mistake of using our techniques to maintain congestion. We have defeated the very purpose of our political freedom by not making the most of our resources and technical ability. Many Latins think: "What *we* could do if we had the wealth and resources of the United States."

But with nothing like the wealth and resources of the United States, Latin technicians have built, and are building, cities which outrank ours in the use of imagination and the provision of facilities for rich social living.

Learning from the Latins

Thus we can learn from the Latins: to make our sterile cities more human, more habitable, more urbane. We can learn how satisfying are less material values, and we can give vigor to our still immature, newly-emerging culture. We can slow down our frantic pace, and reshape our cities for increased leisure and more pleasant living. We can use the cities of Latin America as a bridge to recapture some of those forgotten but coveted habits which our ancestors left behind in the cities of Europe. We can build into our own towns and our own lives those very things for which we travel thousands of miles on luxury liners, on which we spend thousands of dollars during the summer excursions we undertake in order to enjoy a brief escape from our technically "perfect" cities. We can treat ourselves to urban equipment essential to a way of life not unlike *The Latin American Way.*

Our own technical skill and advanced economic status can certainly make it possible to accomplish at least as many of these urban advantages as have the Latins. We certainly have it within our abilities to act with the boldness which motivates the Latins in opening new arteries like the Avenida 9 de Julio in Buenos Aires—there is no single recent work in the United States involving the tearing down of built-up areas that compares with this one alone. Among all of our cities built on bays or waterfronts—New York, Boston, Chicago, San Francisco, or Seattle—not one can compare its waterfront treatment with that of Rio de Janeiro or Montevideo. And where is there one among all the cities of our West as boldly planned and built as Brazil's Goiania? The city planning attack on Sao Paulo exhibits a boldness of approach that no planner in any United States city has dared to show.

We can also learn from the Latins by studying their policies on the use of public resources, as public property, for the good of the people. Their adaption of social security funds for housing purposes might well be applied in the United States as a means of making full use of those funds during the post-war period and at the same time providing necessary housing.

What They Can Learn from Us

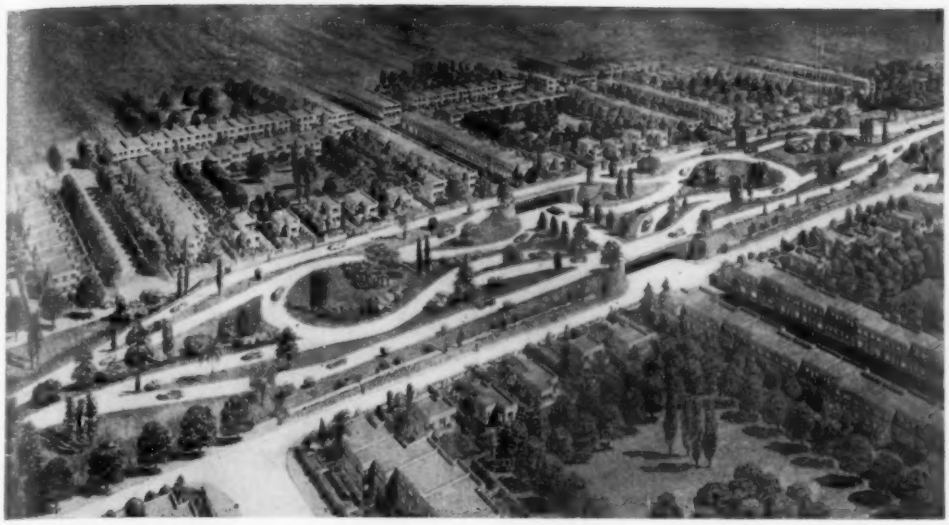
Closer cooperation on urban problems can make available to the Latins certain techniques in which we excell and for which they have a desperate need. Mutual benefits can result from the Inter-American technical cooperation that exists now, during the war. These benefits can help greatly after the war to assist both North and South American technicians to replan and rebuild cities. The parts of their cities which have been built with imagination are a demonstration of what they might do with all parts of their cities when they have advanced to a higher degree of technical and industrial development.

Over and over again I was told by Latin technicians that the greatest thing the United States can offer is to show them how to organize, how to develop each particular country from a technological point of view. It is economic and technical assistance they want — cultural moves mean nothing to the man on the street. The advancement of their own industrial power through our assistance will be followed by a logical, spontaneous recognition of our own cultural achievements.

The first objective in our program of Latin American cooperation must be to make attainable a new standard of living based upon a broadened economy. Such an objective will provide opportunities for the exchange of ideas relating to city and regional planning and low-cost housing. I emphasize the demand I found on the part of Latin Americans for material and data on our experience in these matters, and their pleas for more widespread technical training in engineering, construction, and sanitation, particularly in Eucador and Bolivia, parts of Colombia, Peru, and even Brazil.

Planning Legislation

A well-rounded program of city and regional planning in Latin America can-



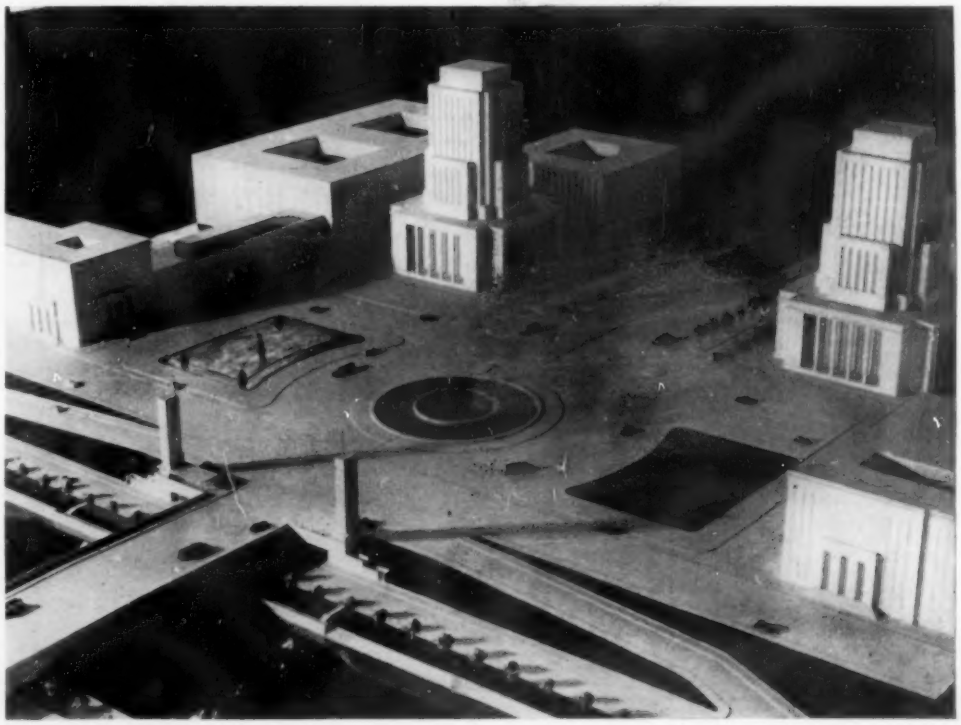
Model of "Double Lassoo" intersection for important cross highway, with parkway elevated

Buenos Aires, Argentina

not be achieved on the existing undeveloped background of limited planning legislation. It is true that in the United States laws enabling planning to be practiced by cities and states and supported by citizens are often more advanced than is the actual practice, but at least the basis is provided. Without that legislative basis at levels of government there is no backbone for a long-range planning program. Legislation at the national level might permit or even *require* planning in towns and natural geographic or social regions. Within these smaller units more detailed legislation could provide the democratic framework for increased zoning control of private property, better standards of land subdivision, building construction, and all other aspects of a master plan. The application of our democratic planning processes, the use of effective planning commissions which in reality represent the citizens, and the proper administration of land use plans, zoning laws, and housing and building codes, would not only serve a purpose in bringing up to date the cities of Latin America, but would also increase the practical application of democracy and further citizen participation in municipal and government affairs. The Latin republics could use well the application of more decentralized, initiative-giving housing laws—particularly in the larger countries, Brazil and Argentina.

Latin Americans need and want assistance in developing their resources to meet their own essential needs, but they also need and want the kind of *planned development* of resources that will make them economically and politically independent. We have experience to offer them in the technical and industrial fields, as we offered Russia during her post-revolutionary years, but we as well as they lack the experience in the *planning* of such development to meet real needs. We have many tools with which to plan, many of them not fully used. We are learning much during the war about scheduling production to meet certain objectives. We may also learn from Russia about the importance of thinking ahead in order to avoid wastes and losses. In the matter of future use of resources, all of us must learn *together* how to plan.

(Two of the many illustrations from "The Cities of Latin America" are here reproduced by courtesy of Reinhold Publishing Corporation, New York publishers of this book.)



Model for new railroad station, bridge, and construction to control the Rio Tiete

Sao Paulo, Brazil

IT'S THE "Pay Off" THAT REALLY COUNTS

62 YEARS of Water Producing Experience

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Getting right down to facts, you can't count a farm's yield by its acreage; a factory's output by its floor area, nor a water system's gallon capacity by its well diameter. It's the "pay off" in each that really counts.

It just so happens that Layne Well Water Systems have the very best "pay off" that engineering skill has yet achieved. For such efficiency there are many good sound reasons. First and foremost is the sixty-two year record of constant endeavor in the well drilling and pump building field. Second is the meticulous care with which each system is built and installed, and third is Layne's unbroken policy of making no compromise with quality.

Many are the cities, factories, paper mills, chemical plants, packing houses, breweries, irrigation projects and mines who use Layne Well Water Systems almost exclusively. They all know that back of every Layne Well Water System there stands the largest, most widely experienced and constantly dependable ground water developing organization in the world.

If in a Well Water System it is the "pay off" in which you are interested, write for late literature. Address Layne & Bowler, Inc., General Offices, Memphis 8, Tennessee.

LAYNE

WELL WATER SYSTEMS

DEEP WELL PUMPS

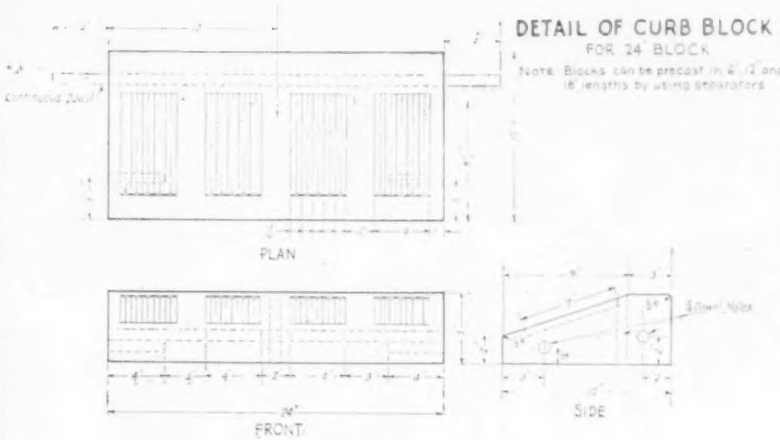
Pre-Cast Curb Block Channelizes Traffic

Ohio Department of Highways develops an economical traffic separator that can be built during slack construction periods and installed when needed.

By GEORGE J. FISHER
Assistant Chief Engineer
State Department of Highways
Columbus 15, Ohio

MOST traffic engineers in order to reduce traffic accidents and congestion have found it desirable to break up the wide and often unused space at existing intersections into channels designed to direct traffic into specific lanes, reduce the number of conflict points to a minimum, and simplify driver decision. This operation calls for raised barriers which may take the form of either solid dividers or islands. In most instances the barriers must be forceful enough to compel the driver to confine his movement to the paved area between them, but they must not be so formidable that they are insurmountable in case of emergency.

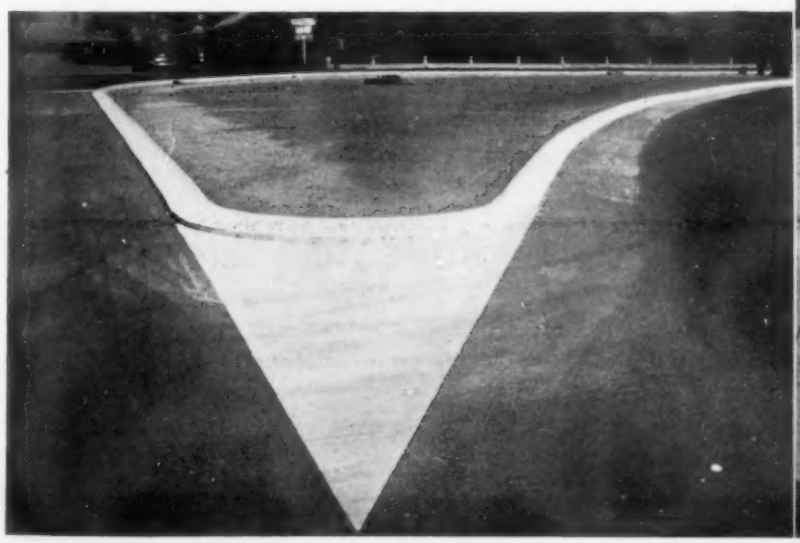
Considering these desirable characteristics and searching for an economical barrier that would lend itself to simple installation for any set of physical circumstances, the Ohio Department of Highways through its Division of Traffic and Safety has designed a pre-cast block that has met all the foregoing requirements. This block can be constructed during slack seasons, stored and transported easily when the need arises.



The curb, poured in 6-, 12-, 18-, and 24-inch sections, is thus adaptable both to curvilinear placement (the short sections being used for sharp curvatures), and to tangents where the greater lengths may be used. Blocks over 24 inches long were considered too heavy for easy handling and would necessitate more reinforcement.

Shown in the accompanying illustrations are the block and the forms for making it. Also illustrated is an installation of the channelizing blocks at the intersection of State Route 2 and State Route US 6 near the City of Sandusky, Ohio.

BELOW: *Island at intersection of US 6 and SR 2 near Sandusky, Ohio. The dirt backfill in the island was not completed when this picture was made.*
RIGHT: *Close-up of rounded corner of channelizing island showing mortar joints between 6-inch pre-cast blocks.*



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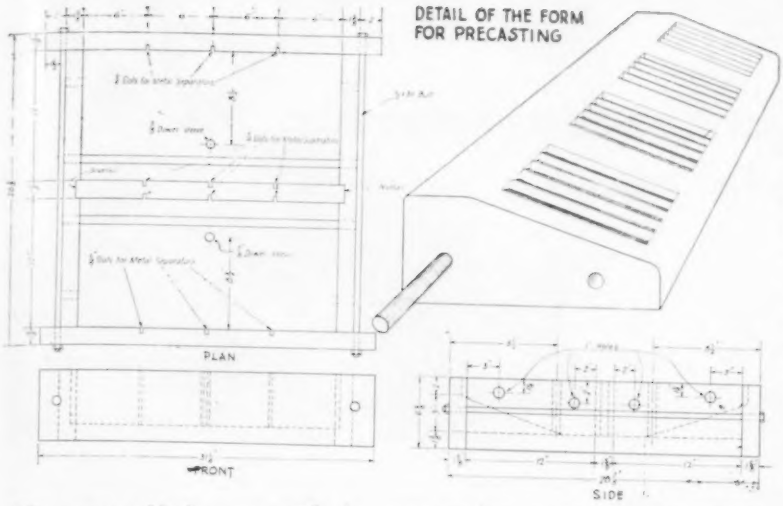


The pre-cast blocks were made in a Division Garage, transported to the job and installed. They are doweled to the pavement and set in a bituminous coating to cement them to the pavement as much as possible. The joints between the blocks are filled with a concrete mortar and drainage is provided by setting in a pipe or other similar implement at the bottom of the mortar. The area back of the blocks can be filled with any material desired.

The cost of such an installation varies from $1.00 to $1.50 per lineal foot depending on the distance they have to be transported, the type of pavement they are to be installed upon, and the cost of materials and labor.

It is highly recommended that particular care be exercised in pre-casting the blocks so that concrete as dense as possible will be obtained. Vibrating the forms while pouring these blocks provides for a much greater density and consequently a much longer life.

The results of the use of this method of building channelizing islands have been very gratifying. They have withstood the shock of truck weight, and the reflecting properties of the corrugations on the face of the block provide them with good visibility at night.

Sewage Contract Declared Void

A CITY does not have the power to enter into a written agreement with a firm or individual to receive and treat sewage to meet any specific standards. This is according to a recent decision by the South Dakota Supreme Court (Supreme Court of the State of South Dakota: April 1944, O. Charles Erickson vs. City of Sioux Falls, et al.) reported by Glen Hopkins, Acting Director, Division of Sanitary Engineering, State Board of Health.

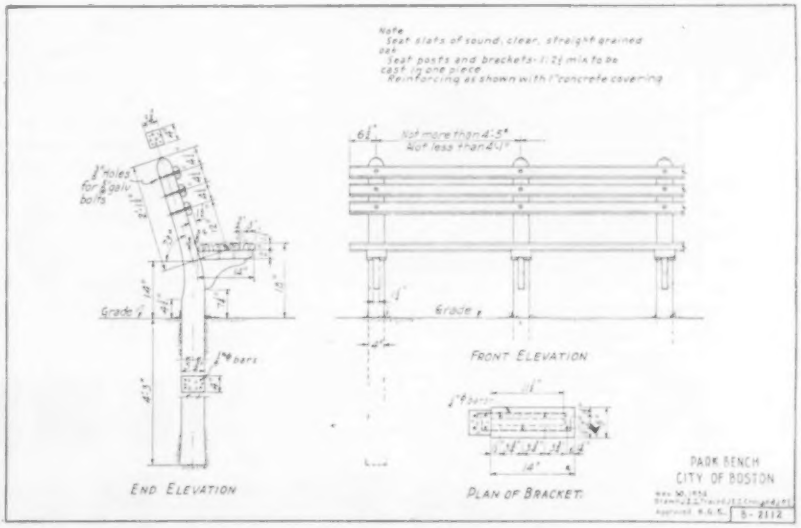
In handing down its decision, the South Dakota Supreme Court pointed out that the city is vested with police power to perserve public health and welfare; and that the proper disposition is essential to both public health and welfare, consequently not a service that is subject to contract. Portions of the opinion were as follows:

"The only privilege which a city can grant to a person or firm within its city limits is a license or permit to make proper connection and empty sewage into the system, there to receive such treatment and disposal as the city may from time to time provide. It is not within the power of a city to guarantee that it will successfully operate a sewage disposal plant or an adequate system. If the system or disposal plant must be cleaned for repairs or fails for any reason to receive or adequately purify the sewage emptied into it, the city cannot be held liable for resulting damages to any person whose sewage is thereby inadequately treated or excluded. It follows that a city cannot by contract assume any such liability or bind itself to receive and dispose of all the sewage which patrons may attempt to empty into it.

"The supervision and regulation of the sewer is a police function of the city. Therefore, in granting permission for the use of the sewers in the first instance and for the continuing use thereof, the city must at all times retain control and any attempt by way of contract to deprive the city of that control is void."

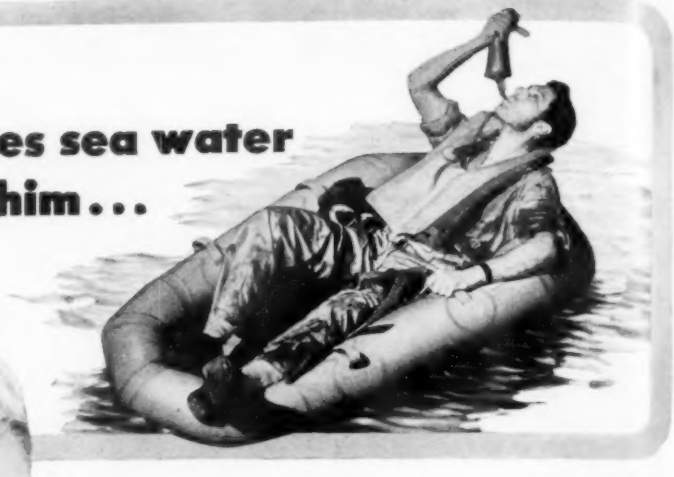
The decision nullified the agreement between the City of Sioux Falls and a packing company located within its city limits in which the city agreed to receive and give certain specific treatment to the packing house wastes in return for financial aid in building the plant by the company. The agreement has been in effect and operating for the past 15 years.

Design for a Boston Park Bench

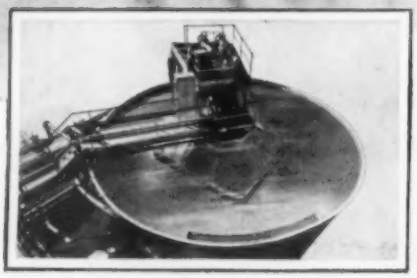


Boston uses the above design for its park benches.

The skill that makes sea water drinkable for him...



..can give your entire city a soft, sparkling water supply



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LATEST example of Permutit's service to our country at war is the kit which takes the salt out of sea water to keep alive our flyers forced down at sea. After the war Permutit's long experience in water treatment will help to build a happier, healthier America. For instance, recent developments by Permutit* make it more practical and economical than ever for municipalities to enjoy good water supplies—free of hardness, dirt and iron.

Many cities have put good water at the top of their lists of post-war improvements. Plan it now for *your* community! Write for full details to The Permutit Company, Dept. G3, 330 West 42nd St., New York 18, N. Y. In Canada: Permutit Company of Canada, Ltd., Montreal.

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• WATER CONDITIONING HEADQUARTERS •

Do You Know the Monetary Value of Your City's Records?

More and more modern municipalities are taking precautions to preserve them by duplication, microfilming, fire-resistant safes and cabinets, fire-retardant construction, and adequate fire protection.

AMONG the most serious elements in fire-loss is the destruction of records. Because the value of records cannot be easily determined, it is often greatly underestimated. The monetary value of some records is fixed by the cost of reproducing them from other sources (for example, replacing a burned map by preparing a new one from the original survey notes) and can be calculated with some accuracy. If the records cannot be replaced, only a "consequential" value can be placed on them, based on the loss to the Government or its citizens that would result from their destruction. This is most difficult to compute in monetary terms, as it may take the form of lowered operating efficiency of the Government, confusion of land titles, or other misfortunes that represent a real but not easily calculated financial loss. The determination of consequential value becomes especially difficult when elements of contingency enter. The destruction of records relating to a particular contract would probably never occasion any loss to the Government, for example, but if a claim against the Government should happen later to be filed against which those records were the only defense, the resultant loss might run into hundreds of thousands or even millions of dollars.

The determinable monetary value of records is well indicated in an appraisal of the property of the Department of Commerce made in 1931, in which the value of its buildings was estimated at $25,387,000, the inventory value of their contents at $10,875,000, and the uninventoried values, consisting almost exclusively of records, at $189,948,000. The possible fire-loss from the destruction of records indicated by this appraisal would be five times as great as the possible loss from the complete destruction of the buildings themselves and all of their other contents.

The most important values of Government records, however, as distinguished from those of a business establishment, cannot be reduced to monetary terms at all. They not only serve fiscal and operating needs but also protect the personal and property rights of citizens. Because of these values to the public the responsibility of Government agencies for safeguarding their records against destruction by fire far transcends the need for protecting the immediate financial values represented by the records.

Classification by Value

To provide complete protection against fire for all records is, of course, impossible. Hence the first step in any logically planned program is to classify the records according to their value, so that an appropriate degree of protection can be given to each group. The relative importance of different bodies of records is not easy to determine, since it depends not only upon the importance of the information contained in the records but also upon the availability of the same information elsewhere. The information in any given record may be absolutely indispensable to the effective operation of an agency; *but if the same information is readily available elsewhere in legally acceptable form,* the original record is not likely to require any extraordinary protection. Consideration needs to be given to the possible duplication of information not only in other records of the agency itself but also in the records of other agencies as well. The necessity of extraordinary protection of memorandum copies of vouchers of any agency, for example, will be reduced or eliminated if originals of those records are available in the general accounting office.

In general, however, records may be divided into the following four classes on the basis of their value:*

1. *Indispensable Records.* Records that establish or protect the rights and property of individuals or of the Government or that are essential to operations of the Government and that could not be replaced if destroyed

2. *Important Records.* Records essential to the protection of the property and rights of individuals and the Government or to important Government operations that could be replaced only with difficulty if destroyed, and records that have permanent historical or other research value

3. *Useful Records.* Records that could be easily replaced if destroyed or that facilitate but are not essential to Government operations and have little or no permanent value

4. *Useless Records.* Records that are no longer used in the current business of the agency and that do not have sufficient administrative, legal, research, or other value to warrant their further preservation by the Government

Means of Protecting Records

Three principal means of prevention of fire loss among records exist:

1. Duplication of the records or of the information contained in them and the physical separation of the duplicates from the originals

2. Placing the records in specially designed buildings or records storage areas in which fire hazards can be minimized

3. Placing the records in fire-resistant vaults, safes, or cabinets

In the normal course of operations many records are created in two or more copies for administrative reasons. If the two sets of copies are housed in separate buildings, satisfactory protection is afforded by this means alone. In other cases, though the records themselves are not duplicated, the information contained in them is. For example, the same information may appear in a set of accounts and in the vouchers from which the accounts were prepared. Retention of the voluchers provides a measure of insurance against the destruction of the accounts, though in such instances the cost of reconstructing the one set of records from the other must be considered in determining whether the risk of fire loss has been sufficiently minimized.

* The classification is based on that adopted by the committee on Protection of Records of the National Fire Protection Association (20), modified to apply to Federal records.

Back again!

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for

Worthington-Gamon Meters

...but Present Government Regulations Limit Use to Small Meters

WAR Production Board Limitation Order L-154 has been amended to permit the allocation of a limited amount of copper to the manufacture of bronze cases for water meters. Bronze will be used for Worthington-Gamon meter cases in ⅝" to 1" sizes only.

"Watch Dog" Quality Based on Longest Experience, Largest Research Facilities

The oldest water meter manufacturer, Worthington has constantly improved its broad line, to minimize maintenance, and at the same time measure ever smaller quantities dependably, accurately.

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The Meter Specified in the Largest Contracts Ever Awarded in the U. S.

"Watch Dog" models . . . made in standard capacities from 20 GPM up; frostproof or split case in household sizes. All parts interchangeable with your present meters of our manufacture. Write for Bulletin.

Low Cost Microfilming of Records

The most economical means of reproducing essential records not duplicated in the normal course of operations, says the Federal Fire Council of Washington, D. C., is afforded by microphotography. Microfilming is most practical with loose papers of uniform size, color of paper and ink, and distinctness of writing. Records of this type can be filmed with high-speed automatic cameras at costs running as low as one to two mills a page. The cost of filming bound volumes or loose papers in which there is a wide variation in the degree of contrast between ink and background runs substantially higher. It should be noted that the use of filmed records in which the documents do not appear in a logical and well understood order is most difficult, and it is generally undesirable to film records not carefully arranged. Certain precautions must be taken to insure that the film copy will be acceptable as legal evidence in the event of the destruction of the originals. Because of this fact and of the many variable factors that must be considered in connection with a microfilming project, it is generally desirable to seek the advice of the Division of Photographic Archives and Research of the National Archives in planning any large microphotographic undertaking.

It should be emphasized that no significant degree of protection is afforded by any means of duplication unless the original and the duplicate records are separately housed so that both cannot be destroyed in the same fire.

Flame Retardant Housing

Large accumulations of important records that are semi-active and must be at hand for relatively frequent reference should be placed if possible in special records storage rooms. Extra protection can be obtained in such storage areas not only by their special construction but also by the enforcement of special fire precautions.

Smaller quantities of indispensable or important records in active use that ment of special fire precautions.

Records are themselves highly combustible, and large accumulations of useless papers constitute a distinct fire hazard to the building in which they are housed and its other contents. The Federal Records Disposal Act of 1943 (Public Law 115, 78th Congress, approved July 7, 1943) simplifies the procedure by which authority may be obtained to destroy records.

Records Protection Program

A well planned records protection program will afford to each body of records of the agency a degree and type of protection appropriate to its value and to the nature and frequency of its use and will minimize the fire hazards to other property and to persons created by the storage of records. To plan such a program it is necessary first to have detailed knowledge of the agency's records, based on an adequate survey. To avoid duplication of effort, it is desirable to integrate studies of records for the purpose of improving records protection with studies undertaken to improve general records management. By proper planning, the information needed to work out a sound protective program can be collected as a part of the studies needed to prepare the schedules for the disposal of records required by the Federal Records Disposal Act of 1943.

The person responsible for planning the protective program will need to know for each class of records created by the agency: the approximate present quantity and annual rate of accretion; the period of time during which the records of each class will be needed in the work of the agency; their value during that period (indispensable, important, or useful); their value after the period of active use has ended (a record may be indispensable while it is actively used but of no value when its immediate use has ended); the conditions under which they are stored (fire resistance of building, kind of filing equipment); and whether the information in the record is available elsewhere.

With this information at hand, it will be possible to set up a schedule indicating for each type of record the number of years that must elapse before it is retired from active use. With proper authorization, records that have no value should be disposed of promptly at the end of that period.

Even if a records retirement program is properly and fully maintained, many records will need to be held in offices or unprotected file rooms for use. These will have been evaluated as indispensable, important, or useful. It is next necessary to devise means of special protection for indispensable records and for important records that are housed in combustible buildings. If the records are kept in duplicate or the information contained in them is available elsewhere, and if the originals and the duplicates or other sources of the information are housed in other buildings, protection adequate for most needs has already been given. If not, and if the records are housed in incombustible buildings in which the probable duration of fire does not exceed the rated fire resistance of available insulated vaults, safes, or filing cabinets, the use of such equipment for the storage of indispensable records is probably the most desirable alternative. If such equipment is not available, or if the records are housed in a combustible building, definite consideration should be given to the duplication by microphotography of indispensable records at least and, if practicable, of important records as well.

Damaged Records

It is possible to salvage much of the value of water or fire-damaged records by the prompt application of proper measures. Safes, vaults, and file cabinets should be opened as quickly as possible after a fire, provided that the contents have cooled sufficiently to avoid renewed combustion when the records are brought into contact with the air. Sheets of water-soaked records should be immediately separated to dry, care being taken to preserve the proper order. Charred records should be handled as little as possible to avoid crumbling. By the use of infra-red photography, an adequate photographic reproduction can often be made of the writing on papers charred beyond ordinary legibility.

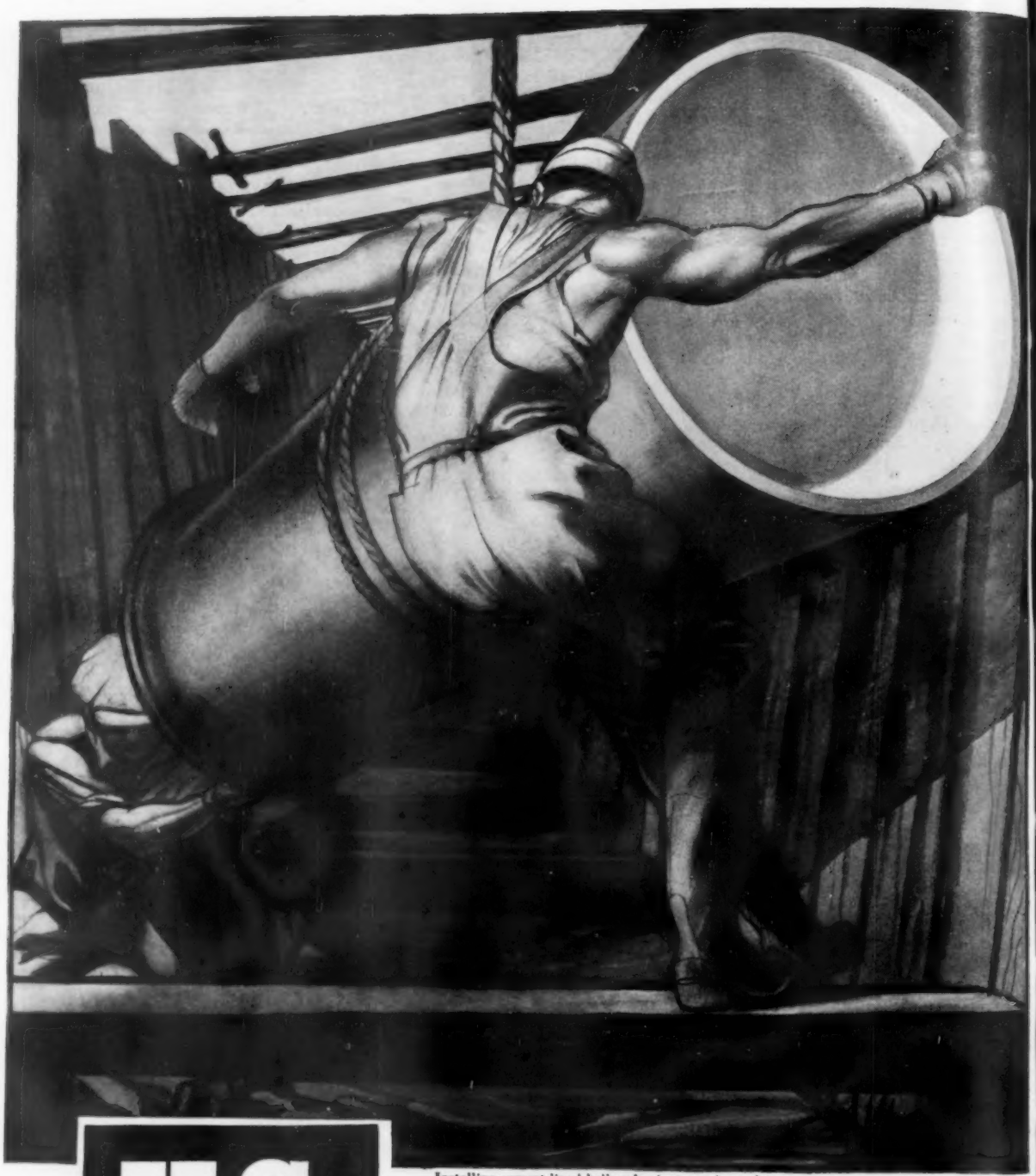
—From December 16, 1943, *Minutes of the Federal Fire Council*, Washington 25, D. C.

Gross Inequities in Taxes on Homes

That owners of houses in the lower valuation groups are, as a rule, paying proportionately larger taxes than homeowners in the higher valuation groups is one of the findings of a "Special Study for the Relief of the Real Estate Tax," conducted by the Property Division of the Bureau of Taxation of the State of Maine.

As announced in *The New England Townsman* for August 1944, "Comparison of the taxes paid on residetnial properties shows gross inequalities which would be largely eliminated by proper administration." The report adds: "If there were a larger return on investment in houses of the lower valuation groups, it might be reasonable for the owners of such property to pay a higher tax, but based on 1942 revenues the rates of return on the investments in residential property of the higher valuation groups are greater than on the lower valuation groups.

"Taxes, local and state, of residential property do not increase excessively the cost of occupancy of single houses, neither do they affect excessively the rate of return on investment in property of two or more family units."



Installing cement-lined bell-and-spigot cast iron pipe.
Drawn by Rico Lebrun for U. S. Pipe & Foundry Co.

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Everybody knows that cast iron pipe stubbornly resists corrosion. Century-old mains still in service prove that—and since those mains were laid under streets originally designed for horse-drawn vehicles, inherent crushing strength and impact-resistance are also proved. Current rigid metallurgical and production controls assure continuance of these essential qualities for underground mains.

How Pratt, Kans.,

Established a Refuse Collection Program

By ALAR B. MAWDSLEY
Water Superintendent

THE change from private to municipal refuse collection, forced on this midwestern city by the exigencies of war, proved to be a virtual obstacle race for the municipal officials facing this problem.

Here is the way it happened. As recently as 1939 the problem of refuse collection in the city of Pratt, Kans., wasn't much of a problem. Most people depended upon haphazard private collections at a cost varying from $.25 to $1.00 per month.

But along came the war and with the war came an Army air base—a base at which crews of heavy bombers receive combat training, or to which crews having seen action return for refresher courses. With the base came an enormous population increase.

This increase, whether temporary or permanent, virtually broke the former collection system. The "garbage pail to pig-pen" collectors simply were not numerous enough, their equipment was too dilapidated, and one by one they began to quit in favor of higher pay and shorter hours at the base.

The business section was hardest hit. Each businessman had been accustomed to making his own arrangements with some private hauler, and when these disappeared we had a minor crisis on our hands. The following excerpts from an editorial by Editor Charles W. Pratt in the Daily Tribune last January indicate how acute the situation had become:

"The accumulation of trash in the downtown area is an astonishing thing—astonishing because for so many years pride in the cleanliness of this city has been a foremost boast of Pratt citizens. A dirty, trash-littered town was unthinkable. Yet today piles of old paper, rubbish, trash, and stinking garbage clutter up the alleyways. Why? The immediate reason is because the never too efficient private system through which business firms disposed of their waste materials in the past has broken down completely under conditions of weather and worn-out equipment over which no one has much control. But in the long run this situation has been growing for years. . . . State and federal authorities, fire insurance underwriters, and other official bodies that are never loath to exercise the authority vested in them may come in. What a field day they would have in the present situation downtown that is a menace to both the health of the citizens and their safety. Regardless of what legal technicalities may be encountered, the health and safety of a citizenry is paramount to anything else and city officials should not hesitate a minute in taking immediate action to rid the city of such menace."

The City Commission, headed by Mayor Guy Sitton, was already wrestling with the problem. In searching for some authorization from taxpayers to work out a plan of citywide refuse collection, the commission asked the Board of Directors of the Chamber of Commerce to sponsor the circulation of a petition. This was done and the response was such that the governing body felt justified in proceeding.

The city dads decided that the best method was to buy and man equipment for trash collection in the business district and to charge the merchants individually and proportionately for this service. An estimate of the operating cost and monthly assessments ranged from $1.00 to $12.50. Fortunately the city's billing machine has a spare label marked "Other Charges" and so merchants are being billed for this service along with their water and light billings.

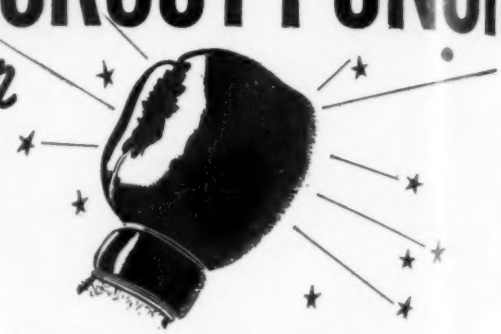
Eventually a suitable trash truck was secured and put into operation, manned temporarily by Street Department employees.

With this phase out of the way the Commission next tackled the more intricate problem of refuse collection in the residential districts. One of the first steps was to attack the ticklish job of securing the necessary tools. The equipment purchased consists of two trucks and a bulldozer. Anyone who has had any experience at all in trying to buy critical equipment knows what an obstacle race it is—leaps over application, hurdles over question-

To obtain this equipment, Pratt, Kans., first applied to ODT for the truck, then to WPB for the trucks and the bulldozer. The two trucks at the left are garbage trucks and to the right is the trash truck. All are 1½-ton Chevrolets having a gross load of 14,000 pounds. The bulldozer at the right is a Baker model 424-A. An Allis-Chalmers Crawler Tractor completes the equipment.

Every Blow a KNOCKOUT PUNCH

...yet this breaker is easy riding



A blow like a "knockout" punch . . . a fast, powerful blow that breaks concrete quickly and easily . . . that's the performance of a Gardner-Denver Paving Breaker.

Yet these paving breakers are remarkably easy to handle. Their perfect balance means less operator-fatigue . . . assures faster job progress. They hit slow, heavy blows with a follow-through that's entirely different from that of the usual pneumatic tool.

Gardner-Denver Paving Breakers are built for long life with low maintenance and maximum operator comfort. Handles are large and curved to fit the operator's hand. Air space between handles and head, and air inlet in cylinder instead of through backhead, keep handles cool. Air consumption is remarkably low.

B-72H Paving Breaker on vault demolition job.

For complete information on Gardner-Denver Paving Breakers and Clay Diggers, write Gardner-Denver Co., Quincy, Ill.

GARDNER-DENVER

Since 1859

naires, belly-crawling under governmental regulations of various kinds. All of them are unquestionably necessary in order to conserve vital materials for essential needs, but nonetheless wearing on the would-be purchaser.

At one meeting of the Commission after the group had been struggling through a maze of regulations, restrictions and assorted difficulties, someone, becoming discouraged over a problem, suggested that a decision be postponed until a later meeting. "Hell," exploded O. B. Hodges, Finance Commissioner, "what do you want to put it off for? Let's get it done tonight." Utilities Commissioner O. K. Stewart and Mayor Sitton agreed and the decision was made.

The 1942 model 1½-ton trucks secured have dual wheel and hoist equipment. It had been planned to mount skip-loaders on the trucks but when E. J. Ball, City Clerk, sent in the order the company replied that its entire production had been taken over by the military.

When the city found it couldn't get what it wanted it did the next best thing—took what it could get, an open top, 14-foot, all-steel body 7 feet x 10½ feet x 26½ inches deep which is hardly satisfactory from the standpoint of either sanitation or ease of handling.

Ordinances Studied

Ordinances from other cities having garbage collection ordinances were gathered and studied. From these the city dads formulated Ordinance 454 which provides for the collection and disposal of garbage and rubbish and for regulations governing the customer's responsibilities. These will be made as experience indicates their necessity.

Such regulations as these, according to Sanitation Officer Lewis D. Blevine, will be made:

1. Garbage containers must be fly tight.
2. All refuse must be accessible to collectors.
3. Householders must burn anything that is inflammable.
4. Brush must be bound for ease in handling.
5. Garbage must be wrapped.

The administration of the program after it is in operation will come under the Health Department. The pick-up schedule as worked out by Messrs. Stewart and Blevins provides for daily pick-up of restaurant refuse. Residents will have two pick-ups weekly.

The land-full method of disposal, approved by the city commissioners and recommended by Paul D. Haney, Acting Chief Engineer of the Division of Sanitation of the Kansas State Board of Health, will be used. According to Mr. Haney, Pratt will be the first municipality in Kansas to have adopted the land-fill method of disposal.

The city has 20 acres of ground situated about one mile west of the city. It is largely rough, untillable ground; part of it at one time served as the city's source of sand and gravel, but long since has been abandoned as a productive pit. It will be enclosed by a picket fence to prevent any loose paper from blowing over the countryside. Based on the accepted figure of one acre a year for 10,000 population, the plot should, if properly handled, serve 20 to 25 years. Steam from a connection at the city light plant will be used for daily cleansing of the trucks.

It is estimated that the cost of maintaining the program will be $12,000 annually. One-fourth of this amount, the legal limit, will be met by taxation. Kansas law permits a levy of .5 mill for garbage control. This will yield about $2,500. The remainder will be secured from transfers of light and water funds. There will, therefore, be no direct charge.

Boulder Dam a Profitable Investment for Uncle Sam

WILLIAM E. WARNE, Assistant Commissioner, U. S. Department of the Interior, Bureau of Reclamation, Washington, D. C., in a recent issue of *Public Ownership of Public Utilities* states that in less than seven years of operation Boulder Dam has produced $30,000,000 in gross revenues. This is more than a fifth of the construction cost of the project to date ($139,000,000).

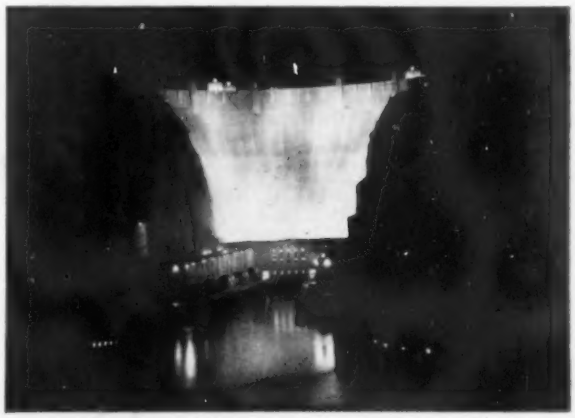
According to Mr. Warne, the revenues from the sale of power and other net revenues from the project will be sufficient to repay in 50 years to the United States Treasury with interest at 3 percent all advances for the construction of the project, exclusive of flood-control allocations.

Aside from replenishing the U. S. Treasury, the introduction of Boulder power was followed by a general lowering of retail electric rates. Definite figures are not available, but it is estimated that the reductions in retail rates amount to $3,000,000 annually over the rates charged before Boulder Dam went into effect. This savings was in turn passed on to the consumer in terms of reduced rates.

Annual gross revenues from Boulder power have been mounting steadily. Additional generators have been installed in rapid succession to keep pace with the amazing industrial growth of the Los Angeles area toward which Boulder power made a considerable contribution.

The giant installation, the largest in the world, is of tremendous significance in the Southwest Pacific area. It serves an estimated 1,250,000 customers, and is a major driving force for industry, particularly for those plants engaged in the production of war materials.

The regulation of the Colorado, once a wild, uncontrollable river, makes possible the irrigation of a half-million acres of highly productive land in the Imperial Valley of California. In the calendar year 1942, this area produced crops valued at $38,000,000. Eventually a full supply of water can be delivered through the canal to 2,000,000 acres of land. It has improved navigation, and diverted water for industrial and municipal use in the Los Angeles area, according to Mr. Warne.



Boulder Dam (this is a night view) has proved in the past seven years of its operation to be a wise investment of public funds.

don't straitjacket a Good Genie

Not only must yesterday's wiring requirements be discarded as the criterion, but proper note must be taken of wiring needs far into the future. To do any less is to condemn a building to early electrical obsolescence, for the greater use of electrical equipment that is promised us will be seriously hampered in buildings that are inadequately wired.

Adequate, proper wiring is a *must,* if tomorrow's buildings are to make full use of cheap, plentiful, labor saving electricity. The Okonite Company, Passaic, New Jersey.

SAME SIZE CONDUIT

#14 #12

Wire *size* is as important as having sufficient wiring. For instance, No. 14 wire has been a standard in building for generations yet No. 12 wire will carry one-third more current, reduce voltage drop by more than a third, deliver more power for your money and yet requires no larger conduit or fittings.

ADEQUATE WIRING THE KEY TO INCREASED PRODUCTION

3608

OKONITE and HAZARD

INSULATED WIRES AND CABLES

Must This Happen Again?

By S. R. DE BOER
Landscape Architect, Denver, Colo.

STUDIES of two western cities made in these days of prosperity indicate a serious condition in tax delinquency, both for general and for special taxes. One city (which it is not fair to name) had a tax-delinquent list of 23 percent of its total area—all of it more than 7 years delinquent, and consisting of vacant lots. To get a clear picture of the problem these lots were platted on the maps of the cities.

Penalties of Land Speculation

Many of the tax-delinquent lots were on the outskirts of the cities and constituted mostly of unused farmlands. Other lots were in the residential districts, often between nice homes but unkempt and dirty with weeds, tin cans, and refuse. Rows of them had been improved with street and water lines, many with sewer lines. A large number were in sloughs and watercourses subject to flood runoffs and unfit for building purposes, except when equipped with super-expensive pipe lines to carry off flood waters.

Some blocks reached within easy distance of the main business centers; nearly all of them had school facilities, and in one place a school was almost surrounded by this dead property. Some lots were on steep slopes and had little building value. In the platting of these cities, subdivisions and building cites were placed everywhere. Some lots were located in the middle of major streams, others on inaccessable hilltops. The rectangular pattern had been carried through regardless of obstruction or topography.

These cities have found that some of the vacant lots will never become good building sites but are valuable for park land. If used for this purpose the abutting property can be replatted and put on the tax rolls at new evaluations. They also found that the outer blocks can be zoned for agricultural use and kept out of city-lot development until the inner areas are filled up. This saves much expense in street, utilities, and school construction.

In these studies it was brought out that the city budgets had been adjusted to the lack of income from these dead properties. In other words, the tax burden was simply distributed over the properties which were able to pay the city real estate tax. The program of redemption was divided into two parts: (1) the public side, by means of which the city, county, and school district could take what was needed for public purposes, parks, school grounds, streets and alleys, parking lots, etc.; (2) the owners of property in the cities were encouraged to buy the remaining lots as additions to their residential or business holdings. As time goes on the cities will be released from this dead weight of worthless property and have it as an active part in the city's development.

In this tax-delinquency map, lots more than 7 years delinquent in general taxes are shown in black. More recent arrears and special improvement taxes are not shown.

Neighborhood Design and Control

OFFERING practical suggestions for measures that might be taken to prevent some of the more disastrous evils, social and fiscal, likely to follow a post-war boom in land subdividing, the National Committee on Housing has just published an important monograph by Henry S. Churchill on "Neighborhood Design and Control."*

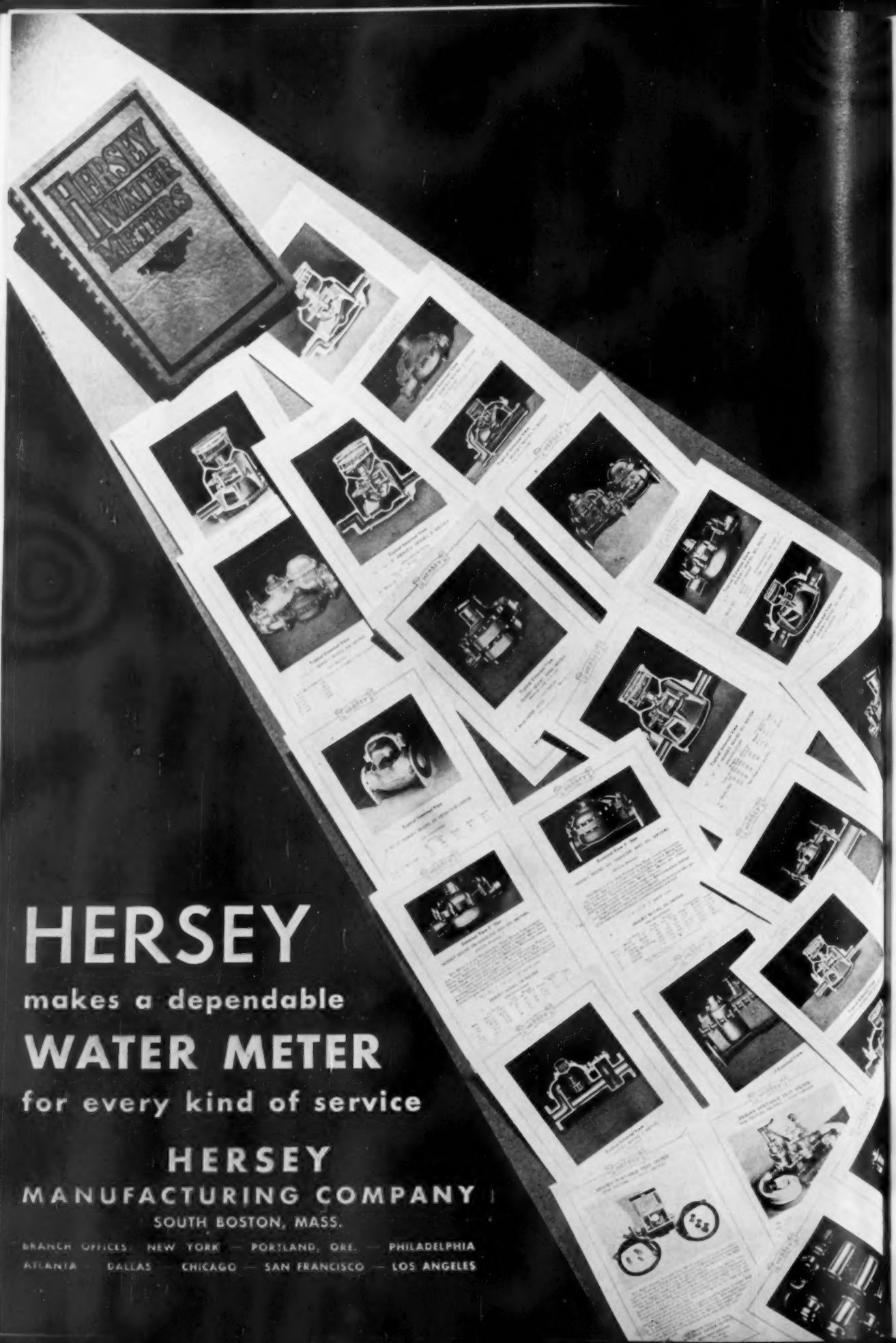
Many factors involved in planning and replanning are discussed, including the essentials of land planning, construction, financing, taxation and local government. Also included are tables highlighting the tax factor in moderate cost housing, and comprehensive check lists of the essentials of adequate subdivision planning.

An introductory statement points out that:

"There is a general feeling that the endless rows of identical houses on narrow lots so characteristic of the American suburban housing of the past decade does not satisfy the needs of the people; that a family's needs extend beyond the four walls of the individual houses to the broader environment of the community as a whole. The techniques for housing and community planning are far ahead of most of the every day building practices. In order to bridge the gap between what is desirable and what is actually done, two questions must be answered: (1) How can the physical environment be planned so as to best contribute to a more satisfactory setting for pleasant, healthful and democratic living; and (2) What obstacles, legal, financial and other-in terms of over-all community planning." wise, stand in the way of the realization

Answers to these questions cannot be found too soon. Here is an important job for municipal officials and city planning commissions.

* See page 137 of this issue.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Fire Chiefs Plan Future on Present High Prestige

THE fire department has always been the most glamorous of the numerous city departments. Who could imagine industrious citizens eager to be volunteer emergency workers for the water or sewer departments? Yet today there are 1,000,000 volunteer firemen. Nevertheless, the agenda of the International Association of Fire Chiefs Convention at Grand Rapids, Mich., August 28-31, gave due attention to public relations; because with respect to the budget the fire department has had very poor relations. Until the present war it was often a choice of paying salaries or buying new equipment. Now the fire departments must do both. During the war their prestige has been vastly improved and they would like to maintain it.

Making the Association larger, more informative, and recognized for its worth, would seem to be a logical first step to stronger public relations. To accomplish this, a President's Advisory Committee was set up under the chairmanship of F. B. Philbrick, President of The Gamewell Co., and a membership sales campaign put on to bring in as many as possible of the 10,000 eligible fire chiefs. Letters will be addressed also to mayors, city managers and other local officials, telling why their fire chiefs should belong and to suggest that the city pay the dues. In this connection the new slogan of the Association is "Recognized Voice of the Fire Service."

President Art J. Baker pointed out that fire losses have reached $400,000,000 in a year, with 100,000 lives lost, and the expectation of property damage amounting to $4,000,000,000 during the next decade.

Post-War Action

Federal government should make a contribution of at least 45 percent of the cost of municipal projects, said Selden R. Allen, Chief of Fire Department, Brookline, Mass., and the fire department projects should be of an essential nature and thoroughly planned. First attention should be given to water supply and distribution, which is inadequate almost everywhere and means feeble fire streams. The size and capacity of present mains encourage conflagration. No more 6-inch mains should be installed, and 8-inch carrying more than twice as much water as 6-inch should be the minimum. Water mains should be cleaned by competent companies, with resulting increase in capacity amounting up to 60 percent. Hydrants should be not more than 200 feet apart in the business district and 250 feet in all other districts. It is more economical, said Chief Allen, to install hydrants which are permanent equipment than to buy hose of more limited life.

No community has enough fire-alarm boxes. Fire loss resulting from delayed alarms can cost much more than the additional boxes. Separate buildings should be provided for modern alarm systems. All wires should be placed underground because they are unsightly and interfere with ladders and other operations. Two-way radio is an essential auxiliary of the fire alarm system and should be on every car and truck. Walky-talky radio will come into common use. New fire stations correctly located are better than remodeling existing stations. Every department should have adequate repair facilities to get disabled apparatus back in service with least delay. Half of present apparatus is over 15 years old; 2,000 pumping engines are needed; and even three years ago 58 percent of large fires was due to poor protection.

After the war, pumps of greater capacity are likely to be favored. Ladder trucks should have cabs. OCD equipment should be barred. High-grade hose is needed. Fog equipment is in demand. In every city there should be a protection committee consisting of representatives of the health, police, building, engineering and fire departments.

One of the minor obstacles to re-equipping the fire departments, said Roi B. Woolley, is the $36,000,000 worth of OCD equipment now in 2,800 communities. It seems that municipal officials are not entirely opposed to this equipment, which in many instances was dramatically demonstrated by the fire departments in the early war period. It is, however, sub-standard equipment and should be shipped out of the country or to the small places and rural regions for the use of new fire squads where organized fire protection did not formerly exist.

Heard, Seen and Discussed at the 71st Convention of the International Association of Fire Chiefs

Modern Fire Equipment

As today's fire must be extinguished with the equipment that is available today, each of the numerous exhibitors was given three minutes in which to present his line or its highlights. The first was G. W. Stowell of Midwestern Manufacturing Co., Mackinaw, Ill., who said that his company can now supply Midwestern protective clothing, including Mackinaw or Double Eagle coats with wool felt lining, and synthetic rubber and canvas for firemen, policemen, and utility and public works departments.

Wooster Brass Co., Wooster, Ohio, offers a new catalog describing certain new products as well as its line of fire devices.

C. M. Dinwiddie of Oren Fire Apparatus Co., Roanoke, Va., building crash trucks for the war, also builds 500-gallon custom-built pumping engines, with tank, using the Hale centrifugal pump. The trucks are built to the needs of the fire departments, Oren engineers working with the cities on the design.

Edwin J. McCarty of the Gamewell Co., Newton Upper Falls, Mass., pointed out that he has no reconversion problem, as the company has produced a greater volume of fire alarm equipment during the war than ever before, including 500 new systems for the Allied governments. Priorities are now obtainable for improvements to existing wire facilities.

U. S. Rubber Co., New York, presented President Art J. Baker with a fire-fighting suit made of Asbeston and weighing only 13 pounds, against 25 pounds for its former model.

C. T. McGraw, President of Circul-Air Corp., Detroit, Mich., told how the Circul-Air hose dryer eliminates hose towers and drudgery and solves hose drying problems.

William H. Stephenson, J. H. Emerson Co., Cambridge, Mass., mentioned the general acceptance by fire departments of simplified pistonless resuscitation in the last four years and the part it is playing in the current infantile paralysis cases, along with Emerson

Unpalatable Water can give You a Big Head too!

Yes, trouble usually comes in big bunches and unpleasant tastes and odors in your raw water supply can develop overnight. That is why those responsible for your water supply should keep on hand an adequate supply of Aqua Nuchar Activated Carbon.

Aqua Nuchar has demonstrated conclusively to over 1,200 water suppliers throughout the country that its use is the most effective method of eliminating taste and odor from water.

If you want to be certain of peak efficiency in your plant, specify Aqua Nuchar Activated Carbon. It is your guarantee of a sparkling and palatable water. There are strategically located stocks of Aqua Nuchar Activated Carbon convenient to important consuming centers to service customers requiring less than carload deliveries. These warehouse stock points form a nation-wide network which assures local delivery service in virtually every part of the United States and Canada. Aqua Nuchar is manufactured in three plants—namely, Covington, Virginia; Piedmont, West Virginia; and Tyrone, Pennsylvania, from whence all carload shipments are made.

BLUEPRINT NOW!

But above all, remember there is a war yet to be won.
Maintain equipment to assure operation at 100% efficiency.

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DIVISION WEST VIRGINIA PULP & PAPER COMPANY

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tion lungs and hot pack equipment.

Nelson Thompson of Homelite Corp., Port Chester, N. Y., whose company is producing in a month the portable pumps and generators which were formerly a year's work, told of resulting improvements in output, life, and trouble-free service in any weather. Portable pressure pumps and a smoke exhauster will be products in the post-war period.

Arthur Myers of Atlas Safety Equipment Co., New York, offered a new catalog covering life nets, belts and other safety equipment.

B. D. Barton of American-Marsh Pumps, Inc., and American Fire Apparatus Co., Battle Creek, Mich., whose companies make Barton-American fire pumps, 400-, 600-, and 750-gallon tanker trucks and triple combination pumping engines, indicated that these products were on display.

Herbert J. Lang of Cardox Corp., Chicago, Ill., said that 100 Cardox crash trucks are in service and many units are being built for foreign theaters. Fixed systems and trucks utilizing low-pressure low-temperature are protecting severe hazards in industry.

H. M. Foster of Herman Nelson Corp., Moline, Ill., asked comments on his light, portable smoke ejector and ventilator. Another product is a heater for standby heating on air fields in cases of crashes.

William Moeller of Superior Fire Equipment Co., New York, directed attention to his streamlined rope life-saving net.

Hubert Walker of American-La-France-Foamite Corp., Elmira, N. Y., said that the 1,250-gallon pumping engine on display would furnish water for the magnesium and fog-nozzle tests to be conducted at the convention. He said that bronze pumps can again be furnished and, except chrome plate finish, the other materials for first-class apparatus are available for regular use.

Other prominent manufacturers exhibiting, but who did not appear in the "Introduction of Exhibitors'" program, were:

Buffalo Fire Appliance Corp., Buffalo, N. Y.

D. B. Smith & Co., Utica, N. Y.

John Bean Mfg. Co., Lansing, Mich.

Mine Safety Appliance Co., Pittsburgh, Pa.

Seagrave Corp., Columbus, Ohio.

Ward LaFrance Co., Elmira, N. Y.

The Institute on Post-war Reconstruction at New York University will open a series of weekly conferences beginning September 27 on "America's Place in the World Economy," Dr. Arnold J. Zurcher, director of the Institute, has announced.

Exhibit of American Architecture for Showing in the USSR

THE Architects' Committee of the National Council of American-Soviet Friendship, Inc., reports that preliminary arrangements have been completed for the preparation by the Architects' Committee, in collaboration with the Overseas Branch of the Office of War Information, of an exhibition of American architecture for showing in the Soviet Union. The exhibit is to be a survey of American building from Colonial times to the present. It will endeavor to give to the Russian architect and the general public a coherent picture of the state of building in this country, the factors influencing its development, and the problems it seeks to solve.

The organization of its material will be under the direction of Vernon De Mars, Chief of the Housing Standards Section of the National Housing Agency; Prof. Talbot Hamlin, Librarian of the Avery Library of the Columbia University School of Architecture; and Joseph Hudnut, Dean of the Graduate School of Design of Harvard University. The exhibit, which will be mounted on some 50 or 60 large panels comprising several hundred pictures and plans, will be prepared as a traveling exhibit for showing throughout the Soviet Union.

The Information Bulletin of the USSR Embassy, Washington, D. C., quotes excerpts from a recent article by Karo Alabyan, Vice-President of the Academy of Architecture of the USSR and now assisting in the work of reconstructing Stalingrad:

New Architecture for Liberated Areas

"We do not intend to reproduce mechanically the former appearance of cities. Many were built hundreds of years ago in a style now outmoded. Our aim is to create well-ordered and harmonious cities.

"The mass-construction institute is devoting special attention to the architecture of comfortable urban dwellings. In rebuilding workers' housing developments, we intend to make wide use of American experience in the construction of one- and two-story residences.

"In planning collective farm villages, the climatic and traditional national characteristics of the respective regions are being taken into consideration. Here, too, our object is not to restore everything as it was, but to design architecturally new types of villages."

Letters to the Editor

Population Density

TO the Editor of THE AMERICAN CITY:

The article on "New Standards for Population Density Regulations" in your July issue (page 59) has been read with much interest.

The idea that the number of "construction" rooms per gross acre should be the subject of regulation was devised by the Arlington County Planning Department and has been in successful operation here since 1940. We call this method of population density control the "Arlington Method." A brief description of it was prepared by the writer and published in the April 1943 issue of *Planning and Civic Comment*.

The factor of "floor area ratio" mentioned in your publication was considered, but found to be contrary to our State Enabling Act.

It is gratifying indeed to know that others have been thinking along similar lines on this subject.

Yours very truly,

FRANK L. DIETER
County Planning Engineer,
Arlington, Va.

July 27, 1944

Poison Ivy on Highways

TO the Editor of THE AMERICAN CITY:

The article by George Otis Tapley, "Cities Can Destroy Poison Ivy," in your August issue (page 53) suggests to me that your readers may be interested in the following paragraph from Part VII of my, "Simplification of Highway Traffic."

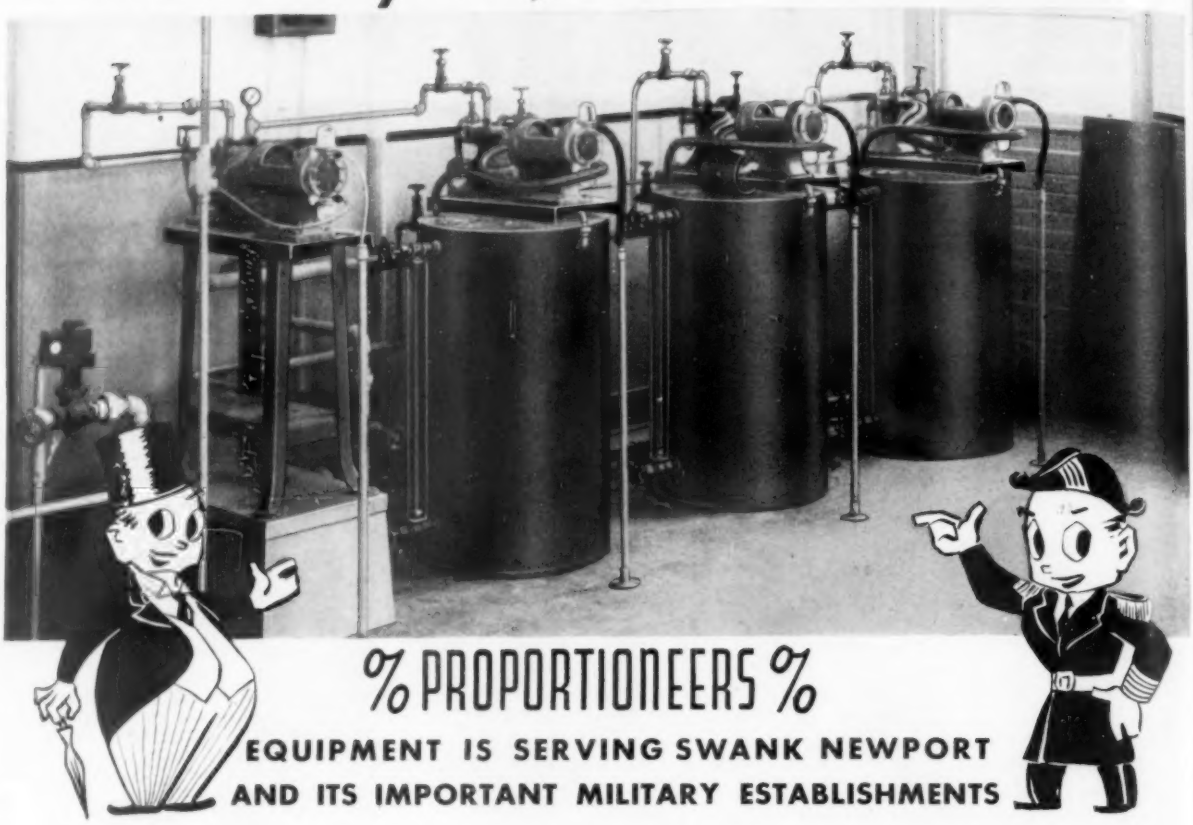
"A very large proportion of the population are poisoned by poison ivy if they touch it and a smaller proportion if the wind blows from the ivy to them. This being so, there does not seem adequate excuse for our government to continue to neglect to eradicate this trouble. I would suggest that state laws be passed requiring towns to remove all poison ivy up to the property line and that property owners be the first year required to clean it out for a distance of 5 feet inside the property line and that thereafter they be obliged to clean out a strip of at least 5 feet each year until it is gradually swept back and eradicated from the entire state."

This plan has worked very well on my place and I am sure would be quite effective and not expensive for each township. Mr. Tapley's method is chemical. Mine is optional, mechanical or chemical.

WILLIAM PHELPS ENO

Saugatuck, Conn., August 16, 1944.

..at Newport, Rhode Island



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EQUIPMENT IS SERVING SWANK NEWPORT AND ITS IMPORTANT MILITARY ESTABLISHMENTS

Four hydraulically operated manually controlled %Proportioneers% Chem-O-Feeders, illustrated above, are installed in the chemical feed room at the new Lawton's Valley Plant of the City of Newport where they are feeding aqua ammonia for taste and odor control with conspicuous success. The 26° BE aqua ammonia is forced by compressed air from a 500 gallon underground storage tank into three individual fume-proof dilution tanks, shown above, where it is diluted with water, 9 to 1 in one of the tanks, and 18 to 1 in the others. One Chem-O-Feeder is used for pre-ammoniation and two for post-ammoniation of the discharge from 1400 and 2800 gallon per minute pumps. The fourth feeder will soon be in use feeding Calgon to the plant effluent for corrosion control.

%Proportioneers% is prepared to handle your postwar ammoniation and Calgon feeding problems, whether your plant is smaller or larger than the Lawton's Valley Plant at Newport which is now operating at four and a half million gallons per day. Write today for our recommendations.

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The Human Side of City Hall

"Our Town's" Affairs: How Greenwich Makes Them Interesting

By PHILLIPS BRADLEY

GREENWICH, Conn., has been well out in front for half a dozen years in the business of making town affairs interesting to its citizens. Its annual reports have been widely commented on elsewhere and before this here. The 1944 report, the latest in a really top-notch series, sets a high standard for City Halls—of any size—in enlisting citizen-interest via the printed page.

There is nothing about this report which is beyond the capacity of any town or city of 10,000 or 15,000 in the country. What makes it so distinctive is not the unique character of Greenwich's municipal government or its operations. It is rather the determination of its officials to make their local government and its activities meaningful to their fellow-citizens. What has happened in Greenwich *can* happen in every City Hall. The job is so well done in this year's report that a brief analysis of its form and content may be a useful index to the ways and means of making the annual report come alive—in "our town."

A Few General Strong Points

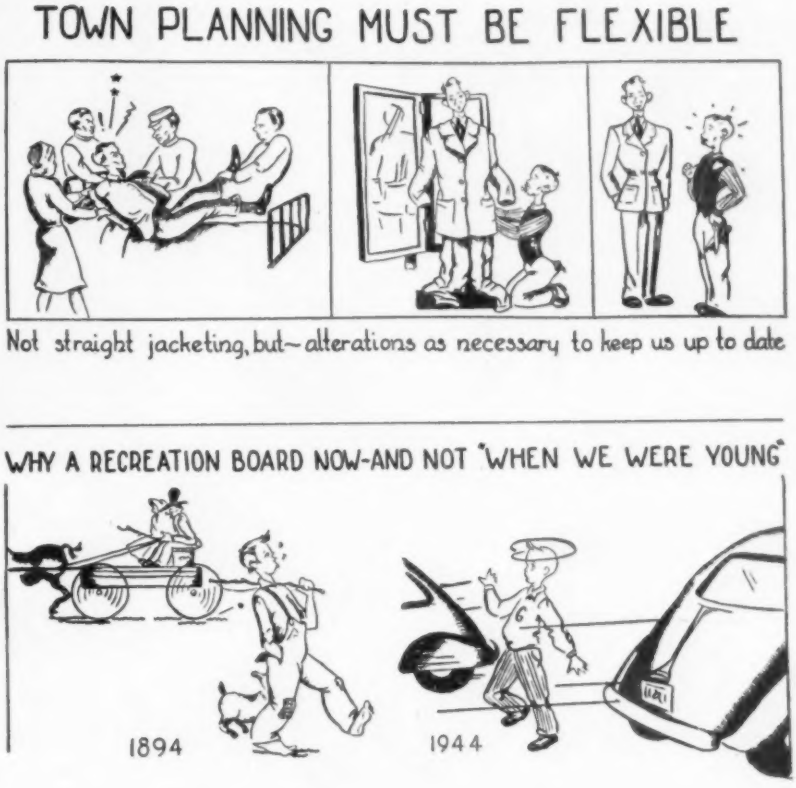
Greenwich starts talking to its citizens with its cover. Print and color are attractive, not just routine. A bit of the inside story has in past years crept out onto the cover as an illustration. This year, "a bird's-eye view" of the town's dual problem, of working in wartime and planning for peace, is presented against the background of the region.

Second, the design of type and page form makes the report easy on the eyes. Margins are adequate; solid blocks of print are broken up by subheads (which tell a story in themselves), and cartoons and pictograms.

Third, detailed statistics are relegated to an appendix—and reduced to intelligible summaries instead of the all-too-frequent arrays of minute tables of income and outgo. Relevant financial and operational data are presented in the body of the report in graphic form, often with animated pictograms to drive home visually the significance of the record.

All of these devices are at the command of any City Hall which will

(*Concluded on page 131*)


TOWN PLANNING MUST BE FLEXIBLE
Not straight jacketing, but—alterations as necessary to keep us up to date
WHY A RECREATION BOARD NOW-AND NOT "WHEN WE WERE YOUNG"
1894
1944
OUR FIRE CHIEF RECOMMENDS
FIRE CODE
Fire Prevention Ordinance
Full Time Assistant Chief
Elimination of Duplicate Street Names
Retirement + Pensions as in Police Dept.
CLOSED by FIRE DEPT.
Power to order unsafe buildings repaired or demolished
POST-WAR RECOMMENDATIONS
Additions to water distribution system.
Alarm boxes in all closely built sections.
Repair shop equipment
A modern drill tower.
New fire stations in East Port Chester, Glenville and Old Greenwich.
A paid driver for each piece of equipment and a headquarters switchboard man on duty at all times
Installation of sprinkler systems in defective bldgs.

Three Typical Illustrations from the Latest Annual Report of Greenwich, Conn.

50 Years of Service TO THE AMERICAN MUNICIPALITY

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PROFITABLE COUNSEL IN PLANNING
NOW FOR POSTWAR WATER
STORAGE IMPROVEMENTS

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As the war years point up the necessity of improvements in your municipal water supply for the future, your planning should be current—ready now, for execution as soon as conditions permit. Our complete experience and engineering assistance is available to your planning group—we'll be glad to consult with you!

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DALLAS, 1217 PRAETORIAN BUILDING · SAN FRANCISCO, 619 RIALTO BUILDING
SEATTLE, 520 EIGHTH AVENUE, SOUTH

The "How" and "Why" of Pipe Joints

For over a century pipes have been laid with various types of joints. A brief history of this development takes one from a simple early joint to the present day designs which are not only easily installed but remain tight under rigorous shock conditions.

By WM. R. CONARD
Engineer and Consultant
Burlington, N. J.

As the old maxim states, "A chain is no stronger than its weakest link," we might say a pipe line is no stronger than its weakest joint. Because of the important function that joints perform we offer this résumé of their use during the past 100 years.

Bell-and-Spigot Type—This veteran in the cast iron pipe field is well known to the water-works profession. It consists of an enlargement of one end to form a socket or collar that overlaps the spigot end leaving an annular space between, into which is usually first calked a quantity of hemp or jute. To back this sealing material, most water-works men have commonly used lead. However, sand-and-sulphur compounds have presented themselves as close competitors. Not so widely used, but successful alternates, nevertheless, have been cement and soft wood.

When using the lead, the most common practice is to melt it and pour it into the annular space and then seal by calking; another is to use lead wool, the lead being shredded and formed into a rope which then can be compacted by calking.

The sand-sulphur combination also is melted and poured into the annular space but does not require calking. Actually when cold and under hydraulic pressure it tends to expand slightly and become self-sealing.

There is also on the market the so-called pre-cast joint which is a combination of hard and soft metals placed in position in the bell of the pipe at the foundry. When the pipe is assembled workmen need only to calk it, thus eliminating the need for melting and pouring any material.

Mechanical Joints—Next in point of use is what is known as the Dresser type of joint; it is well adapted not only for cast iron pipe but for steel, wrought iron, concrete, and asbestos cement.

The joint may be described as a sleeve with a stuffing box at both ends. The sleeve is large enough to slip over the ends of the sections of pipe and the packing space is filled with rings, usually of special shape, readily deformable, which in turn are held in place and compressed to form a seal by a follower ring at each end of the sleeve. These rings are in turn held in place by a series of bolts and nuts which are drawn tight, bringing the followers toward each other and against the gasket rings, making a sealed joint.

Flanged Joints.—This type of joint, the oldest in the field, is adapted for use for cast iron, steel and wrought iron pipe. In use for cast iron and cast steel, the flange is usually formed integrally with the pipe itself. But with wrought steel and iron pipe the flanges are, as a rule, separate parts and are attached to the pipe usually by threads or other types of attachment. The joints are sealed by a gasket.

Bell-and-Spigot Mechanical Joints—Also, within the past 25 years there has come on the market a second type of mechanical joint useful when sealing conditions are difficult. These joints are usually made from bell-and-spigot pipe having an extension on the bell end with a recess to take a ring gasket. A separate or companion ring flange which has a projection on one side to compress and hold the gasket in place is slipped over the spigot end of the pipe, both flanges being constructed so that they can be drawn together with bolts. One of the newer developments of this type is the Dresser Bellmaster Style 85 incorporating a resilient type gasket which is inserted and locked in the bell after the manner of the mechanical joint. This joint was designed to remain uniformly and permanently tight not only when exposed to unusual corrosion but also when subjected to ground settling, vibration or shock.

The assembly of the pipe consists in inserting the spigot into the bell, placing the ring gasket in the recess and bolting the two ring flanges together, compressing the ring gasket and sealing the joint.

The Socket-and-Tenon type of joint finds use only with cast iron pipe. It essentially consists of a shallow socket machined on the inside, a machined spigot or tenon machined outside to fit, metal-to-metal, on a slight rounded taper. The joint is sealed and drawn together by bolts through lugs on either end of the pipe.

The Bell-and-Socket type of joint is used particularly in submerged pipeline work, and very seldom utilizes anything other than cast iron.

There are several types of these joints but the one most widely used is known as the Metropolitan. In this the bell or socket is cast in rounded form, machined on the inside with a riding ring next to the junction with the pipe proper. The spigot has a rounded machined outer surface. When assembled the spigot rests on the riding ring in the socket; this riding ring forms the back or shoulder of the sealed joint. The remaining annular space is calked solidly with lead similar to an orthodox bell-and-spigot joint.

There are two other types of joints, both mechanical: one is of the same material as the pipe and the other is of metal. Both are used with cement-asbestoes pipe which being special and for a particular type of pipe will not be described here in detail. There are a few other types of joints, but their use is limited, and space does not permit their description.

The life of any pipe joint, generally speaking, runs concurrently with the life of the pipe it serves.

No pipe joint can be said to be trouble-free, and depends to some extent on the service demands.

In planning a pipeline all of the probable service factors should be studied and selection made of the type of joint which appears most nearly to cover them all, so far as can be foreseen.

This holds especially true nowadays, with the ever increasing value of the water that is carried, and the consequent necessity of conservation and of keeping the water pure to the "last drop."

A joint that comes as near being bottle-tight (with some degree of flexibility) as possible is the most valuable one.

HOODCHLOR

The GUNGA DIN of the U. S. A.

Safe Water Insurance Overseas and At Home

Thanks to HOODCHLOR High Test Calcium Hypochlorite, with 70% available chlorine in dustless, granular form, safe drinking water is conveniently supplied to our boys overseas no matter how primitive the front; how uncertain the natural sources.

Thanks to HOODCHLOR, you, too, here at home, can have this modern health insurance. Used for potable water treatment in municipal and private water systems, for sewage disposal treatment, for swimming pool and hospital sanitation, and for disaster relief, HOODCHLOR provides the easy, sure and inexpensive way to safeguard the health of any community.

Send for folder and name of nearest supplier.

He's heading for a command post at the front lines on Saipan, with a load of chow and *pure* water for his fighting comrades.

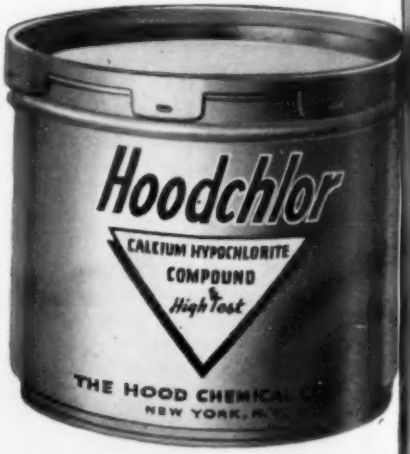
Below: "Bucket brigade" of Marines, on the beach at Saipan, showing the importance of emergency supply of *pure* water.

GUNGA DI
1944
EDITION

Official Photos. U. S. Navy and U. S. Marine Corps

NEW HOODCHLOR CONTAINER

HOODCHLOR is now shipped in convenient resealable steel pails, lined with chlorine resistant lacquer. Net weight 25 pounds.



HOOD CHEMICAL CO., Inc.

Executive Offices: 1819 Broadway, New York 23, N. Y.

Factory: Akron, Ohio

HOODCHLOR HIGH TEST CALCIUM HYPOCHLORITE · CAUSTIC SODA
BICARBONATE OF SODA · SODA ASH · CHLORIDE OF LIME

Capital Outlay Program Clearly Tabulated

TABLE A-10 DEPARTMENTAL CAPITAL OUTLAYS

YEAR	FIRE	FIRE & POLICE SIGNALS	EDUCATION	PARKS	PUBLIC BUILDINGS	MISC. INC LAND TAKINGS	PUBLIC WORKS DEPARTMENT									TOTAL	YEAR
							WATER	WATER WORKS	SEWERS & DISP'L	STORM WATER	STS. & HIGHWAYS	SIDEWALKS	CHAPT. 90	BRIDGES	OTHER	IMP'S & BRANCHES	
1945	18,000	2,200	156,200	10,750	42,273	18,000	42,000	322,000	62,000	12,000	40,000	14,000	46,500	12,000	43,000	35,000	875,923	1945
1946		1,200	19,450	10,700	15,208		31,000	267,000	25,000	12,000	40,000	14,000	51,500		8,000		494,358	1946
1947		2,200	7,000	18,000		30,000	24,000	262,000	15,000		40,000	14,000			8,000		420,200	1947
1948		2,200		5,000			24,000	12,000			40,000	14,000			8,000		105,200	1948
1949		2,200		5,000		30,000	24,000	12,000			40,000	14,000			8,000		135,200	1949

AN exceptionally well-presented program of proposed capital improvements, prepared by the Special Committee on Post-War Planning of Pittsfield, Mass., and approved by the Mayor and City Council, is available on application to Leon H. Reed, Commissioner of Public Works of that city.

Under an ordinance adopted by Pittsfield last year, capital budgeting is specifically tied in with the standard budgeting procedure established by the Massachusetts Municipal Finance Law. It requires that a six-year program of capital improvements be annually submitted to the City Council by the Mayor, who is to be assisted in the preparation of the program by certain permanent city officials named in the ordinance.

In the above-mentioned report, the Special Committee on Post-War Planning points out that:

"The special information annually required for this program will greatly assist the Mayor and the City Council in their study of the regular city budget, because it will furnish them with a comprehensive up-to-date picture of the city's financial condition, something which they have never had heretofore.

"It should be stressed here that our ordinance sets up a permanent program rather than one that is designed merely to serve in the post-war transition period. However, due to the influence of wartime priorities and lack of manpower and materials, our program is necessarily inaugurated under those prevailing restrictions. Consequently, the full scope of the program will not unfold until the war has been brought to a victorious conclusion.

"It is our sincere opinion that this new program is one of the most constructive improvements in municipal budgeting procedures in several decades, because it will enable the citizens of Pittsfield, for the first time, to have accurate and understandable information about the city's financial condition and its plans for the future."

Thirteen pages of tables give detailed statistics for the years 1934-1943 and estimates for the years 1944-1949 under the following headings:

Grand Summary
Annual Income from Taxes
Annual Income from State Collected Revenues
Annual Departmental Operating Receipts
Annual Federal and State Grants
Annual Income from Licenses, Fines, Fees, Dogs, Assessments, etc.
Annual Income from Public Service Enterprises
Debt Service
State and County Taxes
Departmental Operating Expenses
Balance Adjustments
Capital Outlays
Reserves
Miscellaneous Statistics

A portion of one of these tables is here reproduced. This shows the proposed departmental capital outlays from 1945 to 1949 inclusive. For 1944 the City Council approved capital outlay budget items totaling $79,440, mainly for land purchase and preparation of plans.

The report is further illustrated with four excellent graphs.

572 Cities and 7 Counties Now Under Manager Plan

WITH adoption of the city manager plan by 12 cities in 1943 and 14 so far this year, 572 cities and towns and 7 counties in the United States now operate under this form of government, the International City Managers' Association reports.

The 572 total includes one of every five cities of more than 10,000 population. While 23 of the 92 cities of more than 100,000 population are city manager cities, the highest ratio is found in the group between 50,000 and 100,000 population—29 cities, or 27.4 percent.

A complete list of the manager cities up to the end of 1943, with the names of their managers will be found in the 1944 MUNICIPAL INDEX.

Fire Chiefs Promotional Program

THE International Association of Fire Chiefs is currently undertaking a promotional campaign for the expansion of membership, hoping to double both the active and associate groups. At the annual meeting of the Board of Directors last January it was decided to encourage such enlargement by means of a direct mail campaign. Each member is now urged to cooperate by actively soliciting applications.

I E S Award

THE Illuminating Engineering Society will award its first gold medal as the highest honor in the field of lighting to George H. Stickney at the Society's Technical Conference in Chicago on September 14.

Associated with the General Electric Co. from 1896 until his retirement in 1937 as Consulting Engineer for the Nela Park Engineering Division in Cleveland, Mr. Stickney designed the radial wave reflector for street lighting in 1906 and the first semi-direct fixture for the incandescent lamp.

The medal award originated last year, to be presented annually in recognition of meritorious achievement conspicuously furthering the profession in the art and knowledge of illuminating engineering.

Principles of City Growth and Structure

will be the subject of a course of lectures to be given by Dr. Homer Hoyt at Columbia University from 5:10 to 7 p.m. on Wednesdays from October 4, 1944, to January 24, 1945. For details apply to the Director of the University Extension, 561 West 11th Street, New York 27, N. Y.

PROVIDENCE IS PROUD OF ITS SAFETY RECORD

. . . and the HARLEY-DAVIDSONS *that helped make it!*

Shown above are 21 of the 22 Harley-Davidsons in service with the Providence, R. I., Police Department and the officers who ride them. At extreme left is Chief James Cusick and at extreme right is Deputy Chief James Murray in charge of motorcycle equipment. Providence uses Harley-Davidson Motorcycles exclusively.

Last year a special award of merit—and for the first five months of 1944, the "Safety Leader" among cities of 250,000 to 500,000 population! That's the fine record of Providence and its efficient police department. Providence knows from experience that no other method can match motorcycles for police work — not only in traffic control, but in many phases of protection and law enforcement.

Through years of dependable, economical performance — for cities of every size, and for many state organizations—Harley-Davidsons have proved their greater effectiveness. Men on Harley-Davidsons cover more territory — concentrate quickly at scenes of trouble — provide better protection for vital industries. What's more, they maintain closer contact with the public — and exercise more lasting and effective control through consistent evidence of uniformed authority.

HARLEY-DAVIDSON MOTOR CO., Milwaukee 1, Wisconsin

Harley-Davidson Motorcycles are available now for vital police needs. See your dealer.

HARLEY-DAVIDSON

Police Motorcycles

★ ON AMERICA'S FRONT LINES OF ACTION ★

Wartime Water Rates--XIII

Of the four cities listed this month, one has a reduction of 10, another of 33 1/3 percent and a third has a 45 percent reduction over the rates listed previously in THE AMERICAN CITY. Gaffney, S. C., has a novel system of presenting the December water bill marked paid as a Christmas gift.

Hastings City, Mich.

Rates:

First	1,000 cu. ft. @	$2.00	per M
Next	9,000 " " "	1.12	" "
All over	10,000 " " "	.90	" "

The minimum charge per quarter is $2.00 with a penalty of 10 percent added if not paid by the 15th of the month in which the bill is rendered. Water users are all being required to meter their water. There is a service charge of $25 which includes a 5/8" meter and a 3/4" service. Where larger service is required cost of materials increases according to size. We are making an attempt to clean up accounts outstanding for payments on meters by the quarter.

General Data:

Population served—5,750
Number of services—1,680
Number of meters—1,680
Number of hydrants—90
Miles of water main—21.5
Supply—Wells
Treatment—None
Tap water—345 ppm $CaCO_3$
Average consumption—0.5 mgd
Plant capacity—2.5 mgd

Consumer Costs Per Month:

3,000 gals.	(400 cu. ft.)	$ .80
5,000 "	(667 " ")	1.33
10,000 "	(1,333 " ")	2.08

This represents an increase of about one-third over rates previously recorded in THE AMERICAN CITY for February 1940. Our plant is self-supporting and we are laying aside some for repairs and replacements.

K. P. LABERTEAUX
City Engineer

Gaffney, S. C.

Rates:

First	800 cu. ft. per mo.	.245	per 100
Next	2,500 " " " "	.178	" "
"	3,300 " " " "	.155	" "
"	6,800 " " " "	.133	" "
"	13,000 " " " "	.122	" "
"	13,000 " " " "	.111	" "
All over		.10	" "

All rates are gross subject to 10 percent discount if paid by the 10th of the month. Minimum 55c per month.

No charge is made for hydrants, street sprinkling, fountains, public buildings, sewer flushing or any other service which would fall on the taxpayer.

It has been our practice for the past 11 years to mail all December bills marked paid as a Christmas present to our patrons.

Our plant is entirely self supporting and we have no outstanding bonds. All extensions since 1910, have been made from earnings.

We have every reason to expect we can "hold the line."

General Data:

Population served—12,000
Number of services—2,376
Number of meters—2,443
Number of hydrants—220
Miles of water main—31
Supply—creek
Treatment—filtration, chlorination
Tap water—12 $CaCO_3$, pH 6.8
Average consumption—0.6 mgd
Plant capacity—1. mgd

Consumer Costs Per Month:

3,000 gals.	(400 cu. ft.)	$ .98
5,000 "	(667 " ")	1.63
10,000 "	(1,333 " ")	2.91

The schedule of rates has been changed from gallons to a cubic foot basis, and blocks changed, but the net cost to consumer is substantially unchanged since those published in the August 1939 issue of THE AMERICAN CITY.

L. V. GAFFNEY
Superintendent

Trenton, Mo.

Rates:

The minimum charge per month is 75c for which 190 cu. ft. of water is furnished without further charge. The water rates beyond this point are:

First	310 cu. ft.	40c	per 100 cu. ft.
Second	500 " "	35c	" " "
"	1,000 " "	30c	" " "
Third	1,000 " "	25c	" " "
Fourth	1,000 " "	20c	" " "
Fifth	1,000 " "	17½	" " "
Second	5,000 " "	15c	" " "
"	10,000 " "	12½c	" " "
Third	10,000 " "	10c	" " "
Fourth	10,000 " "	9c	" " "
Fifth	10,000 " "	8c	" " "
In excess of	50,000 " "	7c	" " "

These rates are subject to a 20 per cent discount if the bill is paid by the 16th of the month following billing.

All water services are installed by plumbers, and sprinkler heads for private fire protection are similarly installed.

No charge for hydrant rentals.

General Data:

Population served—7,200
Active services—1,800
Number of meters—1,800
Number of hydrants—170
Miles of water main—53
Supply—Grand River
Treatment—Chlorination, lime and aluminum sulphate for coagulation
Tap water—200 ppm, $CaCO_3$
Plant capacity—3 mgd
Average consumption—0.8 mgd

Consumer Costs Per Month: (net)

3,000 gals.	(400 cu. ft.)	$1.40
5,000 "	(667 " ")	2.24
10,000 "	(1,333 " ")	4.10

This constitutes a 10 per cent reduction below rates in THE AMERICAN CITY for October, 1939. The reduction is caused by a 20 per cent discount instead of the 10 per cent previously allowed.

W. E. RALLS
Superintendent

Winona, Minn.

Rates:

First	1,000 cu. ft.	$1.25	per 1,000 cu. ft.
Second	1,000 " "	.75	" " " "
Next	18,000 " "	.52	" " " "
All over	20,000 " "	.36	" " " "

Churches, charitable and educational institutions are allowed a 30 percent discount on the regular meter rates, but the following minimum charges are collected in all cases:

For 5/8" meter—per month		$ .50
" 3/4" " " "		.70
" 1" " " "		1.00
" 1½" " " "		1.65
" 2" " " "		2.30
" 3" " " "		3.00
" 4" " " "		3.60
" 6" " " "		5.30
" 8" " " "		6.95
" 10" " " "		8.95

In addition to the foregoing rates and minimum charges the following monthly rentals are collected on all meters 3" and larger for a period of 10 years of active service after the date of installation of the meter.

Rental for 3" meter, per month		$1.35
" " 4" " " "		2.00
" " 6" " " "		4.00
" " 8" " " "		6.50
" " 10" " " "		8.00

There are no hydrant rental charges and no sprinkler charges.

General Data:

Population served—22,490
Number of services—5,200
Number of meters—5,300
Number of hydrants—510
Miles of water main—55.57
Supply—3 deep and 1 shalow, gravel-packed well
Treatment—Chlorine and ammonia
Tap water—260 ppm $CaCO_3$, pH 7.6
Average consumption—1.8 mgd
Plant capacity—6 mgd

Consumer Costs Per Month:

3,000 gals.	(400 cu. ft.)	$ .50
5,000 "	(667 " ")	.83
10,000 "	(1,333 " ")	1.50

These rates represent a reduction of around 45 percent below those appearing in THE AMERICAN CITY in June 1934, and should be able to carry us successfully through the coming years.

H. C. AHRENS
Secretary
Board of Municipal Works

EAGLE ALL-RED STOP SIGNAL

Enables guards to efficiently check daily more than 10,000 war workers' cars in and out of one of America's greatest arsenals.

Eagle Signal Corporation equipment is performing many effective jobs in and around war areas, where an unprecedented flow of traffic presents many hazards. Eagle products provide utmost safety and efficiency in these new avenues of travel.

Now is the time for every municipality to make a careful check on its present and post-war traffic flow problems. Our experienced traffic engineers are ready to help you.

ARMY (E) NAVY

EAGLE
Signal Corporation
Moline Illinois

FOR SIGNS ...EASIER TO READ!

The clarity and legibility of this 36" Scotchlite stop sign is a good example of the advantages of over-all sign reflectorization. There's no glare of the reflective background and no distortion of the sign lettering.

Night or day sign appearance is identical—in color, in size and shape. Only with Scotchlite are you assured these features.

You'll find Scotchlite an easy reflective material to handle and apply too, as no drilling of holes, bolts, housing, etc., are necessary for application. The saving of time is outstanding.

Find out how Scotchlite can fit into your sign program ... Write today for prices and complete information.

Scotchlite
REG. U.S. PAT. OFF.
REFLECTIVE SIGN MATERIAL *24 Hour Visibility*

MFRS. 3-M PRODUCTS

MINNESOTA MINING AND MANUFACTURING CO.
GENERAL OFFICES SAINT PAUL 6, MINN.
BRANCHES IN PRINCIPAL CITIES

Traffic Control and Facilitation

Conducted by Traffic Control & Facilitation Committee, Institute of Traffic Engineers, 60 John St., New York

D. Grant Mickle, Chairman; Donald S. Berry, Fred W. Fisch, Maxwell Halsey, Wilfred F. Irvin, Harry C. Koch, Philip S. Mancini, Claude N. Maurer, W. F. Milner, W. L. Robinson, I. S. Shattuck, George M. Webb

Portland Highway, recently completed. AT LEFT: *Swift Blvd., looking south. The four lanes from left to right lead from Vancouver Bridge into Swift, Union, and Denver Aves. Swift connects with overpass to Vancouver Bridge; Union and Denver lead into Portland.* AT RIGHT: *Denver Ave. looking north. Lanes from left to right lead from Swift and Vancouver to Portland, and via Union Ave., to Vancouver Bridge. By staying to extreme right Swift Blvd. is reached.*

Highway Capacity Increased in Wartime

By F. B. CRANDALL
Assistant Traffic Engineer
Oregon State Highway Department

THE RECENTLY completed traffic interchange at the intersection of Union, Denver, and Swift in Portland is an example of wartime highway construction that combines expressway design and extensive channelization to reduce accidents and vastly increase traffic capacity in a location formerly noted for hazards and congestion.

Situated at the approach to the North Portland Interstate Bridge, crossing the Columbia River into Vancouver and serving eight major war industrial and military establishments, plus great stockyards, the intersection formerly was channelized at grade, controlled by fixed-time signals. It saw 45 accidents in 1941 and 67 in 1943, when the 24-hour traffic volume there was over 25,000 vehicles. Traffic approaching from Vancouver frequently "piled up" for one and a quarter miles, and encountered up to 30 minutes' delay at the intersection!

The new interchange involves three grade separations and numerous access and interchange ramps, to eliminate all traffic lights and congestion. About 85 percent of all traffic now moves at uninterrupted averages of 35 miles an hour and the new facility has a capacity for much higher traffic volumes than now exist.

The interchange has not been in operation long enough to determine its accident rate. But since 40 of the 45 accidents in 1941 were due to angle collisions and turning conflicts, which should be eliminated entirely by the new facility, a conservative estimate is that the future annual rate will be 15 accidents for comparable traffic volumes. Side-swiping accidents may increase, since there are several points which rely on "weaving" of vehicles. Since the integral ramps as a whole are designed for one-way traffic, pedestrians will need to look only in one direction in crossing, and the facility should be safer for them.

Redesigning Detroit Intersections

By J. ANTHONY CARROTHERS
Senior Assistant Traffic Engineer, Detroit, Mich.

ONE of Detroit's worst accident problems for many years has been at the intersection of two main arteries, Gratiot and Conner. The city airport and an important industrial section make the intersection a focal point for turning movements. The intersection had a daily traffic volume of over 42,000 vehicles before the war—a total that was only 15 percent less during the war.

The heavy left-turn movement from north-bound Gratiot lanes into Conner was the major factor in 54 accidents

Gratiot Ave. in Detroit looking east into new roadway. Road reconstruction and a new redesign program have lowered the accident rate materially.

This is how G-E lamps, plus good equipment and proper maintenance help provide modern traffic safety lighting on Forest Hills Drive, East Cleveland, Ohio. Plan now for postwar . . . good street lighting is the sign of a good place to live.
. . . Good lamps are the heart of good street lighting
2,500 LUMEN
15,000 LUMEN
TRAFFIC SIGNAL

Get these advantages . . . with G-E!

1. The latest developments of G-E Lamp Research.

2. Lower and lower prices—50% less over last decade.

3. Leadership in street lighting research, to give the public better seeing from street lighting, per dollar.

4. More than 480 tests to assure high quality.

5. Ready availability of a complete line of lamps through nationwide G-E stocks.

THE AIM OF G-E LAMP RESEARCH IS ALWAYS TO MAKE G-E LAMPS *Stay Brighter Longer*

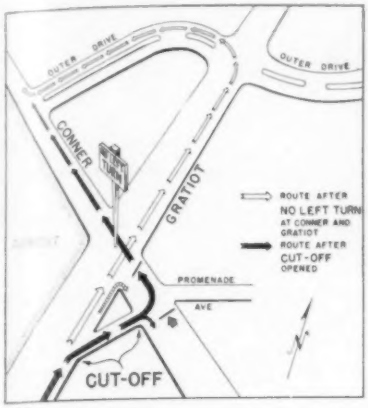
G-E MAZDA LAMPS

GENERAL ELECTRIC

BUY WAR BONDS AND HOLD THEM

Hear the General Electric radio programs: "The G-E All-Girl Orchestra", Sunday 10 p. m. EWT, NBC; "The World Today" news, every weekday 6:45 p. m. EWT, CBS.

at that corner in 1939. But when we prohibited these left turns in 1940, the problem simply shifted one block



north to another major intersection, Gratiot and Outer Drive, where motorists would circle back to complete their turns into Gratiot. That intersection's accident total jumped from 47 in 1939 to 72 in 1940. The two intersections together accounted for 252 accidents in the two years of 1941 and 1942.

In September 1942 we completed our intersection redesign program that removed the left-turn movement from *both* intersections. It involved a new cutoff from Gratiot to Conner, so that motorists desiring to turn left into Conner would first *turn right* about 100 feet before reaching the intersection. At a break in traffic on Conner, they would then turn left into Conner and proceed across the Conner-Gratiot intersection. This project made it possible to prohibit left turns from northbound Gratiot at both Conner and Outer Drive.

An intricate traffic signal problem was involved, in order to clear an area in which to "store" the new movement from the cut-off pending the time when it could proceed across the main intersection. A synchronous, 15-circuit, 16-interval signal controller was adopted which also acts as a "master" for the local induction controlled at Outer Drive and Gratiot. Northbound Conner traffic which has passed the Promenade intersection gets an extra three seconds of green light, encouraging it to cross Gratiot and clear the area needed by cars making the left turn into Conner from the Gratiot cut-off.

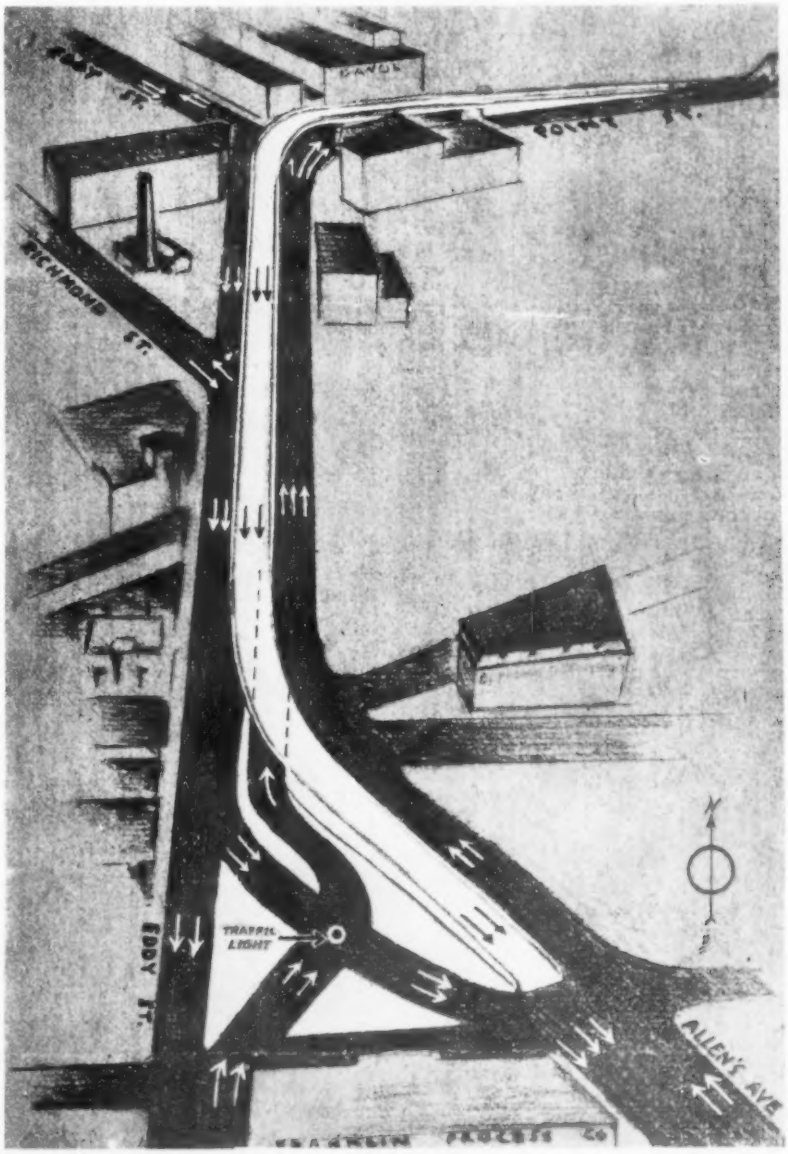
After nearly a full year of operation, the project is a conclusive success. The Conner-Gratiot accident rate for the first year will be about 37, and the Gratiot-Outer Drive rate about 47—proof that in eliminating left turns from northbound Gratiot lanes we have been able to reduce accidents and congestion materially. The cut-off lane also is used by motorists turning right into Conner, and has been an all-around expediter of traffic movement.

We took advantage of a minor street, Promenade Avenue, which also enters Conner near Gratiot, and which already dictated that the traffic stop line for northbound Conner lanes should be some distance back from the main intersection. This arrangement, together with a complete new traffic signal installation, created an area clear of traffic so that vehicles from the cut-off route could enter ahead of the stopped Conner traffic.

Providence Street Modernization

By PHILIP S. MANCINI
Public Service Engineer Providence, R. I.

SUCCESS of the Point and Eddy Streets viaduct, completed before the war, in handling a 25 percent wartime traffic increase on that route, created by traffic to the Walsh-Kaiser shipyard, has given impetus to plans for further street modernization after the war's end.



Overhead highway in Providence costing $600,000, completed before the war. Twenty feet wide, one-way, two-car traffic lanes are supported on giant pylons in the center allowing normal traffic flow beneath the raised roadway on each side of the center pillars. This is the first highway of its kind in the country.

Will YOUR Boy Return with Victory Only to Be Hit on an Unlighted Street Corner?

MAYBE you haven't a son or a brother in the service. But maybe it will be the son of the woman next door. Could you explain to her that street lighting costs too much?

Serviceman or civilian, too many people are dying in nighttime traffic accidents. More U. S. citizens were killed on our streets and highways in one year (1941) than in the first two years and four months of the war! Juvenile delinquency and crimes against women overtax the police and hospitals. The time has come for action, and yours is the opportunity to identify yourself with the most public-spirited municipal officials in the country. Plan, promote, *demand* a program of street lighting modernization adequate for the needs of the people.

IF you are puzzled about how and where to start, go to your electric utility, or we will be glad to help by showing you how other municipal officials are solving problems similar to yours. For a good beginning, write for your free copy of "Postwar Traffic Plans for the City of Buffalo". The Street and Traffic Safety Lighting Bureau, 155 East 44th Street, New York, New York.

GOOD STREET LIGHTING—THE SIGN OF A GOOD PLACE TO LIVE

The intersection, at the time traffic studies were made, carried a peak-hour load of nearly 4,000 motor vehicles and eight rail lines. Congestion and hazards were acute. The problem centered in the heavy left-turn movement from Point to Eddy. It was solved by a $600,000 overhead highway, providing two lanes of one-way traffic, supported on giant pylons and allowing surface traffic to flow beneath the raised roadway. This, plus special approach, exit, and channelization facilities, created a solution which handled traffic flow exactly as we expected and eliminated congestion at one of the most troublesome spots in the city.

No Traffic Deaths in 197 Days

A NATIONAL safety record for 1943, with 197 consecutive days without a traffic fatality, was the result of three years of safety education of the public by the Wichita police department. Though families of war workers almost doubled the Kansas community's population, accidents have been reduced 53 percent since 1940.

The safety education program to teach motorists and pedestrians safer driving and walking habits was initiated in 1941, according to the International Association of Chiefs of Police. Safety factors are stressed through the press, radio, theaters, schools, and traffic courts. Large colored posters are carried on all buses, police vehicles, in radio studios, public offices, plants, schools, restaurants, and public buildings. Signs are changed weekly and those still usable are given to fleet truck owners for display on their vehicles.

At strategic intersections and cross walks, circular sign standards bear short safety messages to thousands of pedestrians. A permanent fixture at the municipal stadium is a large safety sign for those attending events.

A large safety poster is mounted on top of a police car which is equipped with a loud speaker. Whenever a motorist or pedestrian is seen disobeying safety regulations, the officer courteously reminds the offenders of the safe way to drive or walk.

All theaters include a safety sound movie short with every program. One trailer illustrating the right and wrong way to ride a bicycle was produced by the police department and included with free movies shown in parks and recreational centers during the summer. Bicycle accidents in Wichita now amount to less than 3 percent of all accidents.

Other safety sound movies are shown in schools, to civic clubs, parent-teacher associations, safety organizations and other groups. Safety programs in schools include bicycle safety clubs, junior traffic patrols, high school safety patrols and traffic courts. The school traffic court personnel is chosen from the student body by students and faculty. When an officer issues a summons to a student violator, he obtains the name of the violator's school so the traffic court clerk may be notified. A high school traffic court summons is issued, and if the violator refuses to attend this court, he is summond to police court. If the violator is guilty, the high school traffic judge usually sentences him to write a theme on safety education, traffic regulations, or his own violation. High school traffic violations have decreased 60 percent since the courts were inaugurated.

Outside Paint Tests for Los Angeles

NOT satisfied with tests made by the city's own engineers, Los Angeles is employing experts from three schools to pass upon the relative merits of various traffic paints.

In the past, the traffic engineer has determined the wearing quality of paints by having bidders place their products side by side on a pavement where vehicular traffic would indicate their varying wearing qualities.

This did not seem sufficiently conclusive in its results, however, and Mayor Fletcher Bowron in his latest budget has set aside $1,000 for testing purposes. The Police Commission has instructed Ralph Dorsey, street traffic engineer, to proceed with employment of specialists for this work to be supplied by the University of Southern California, University of Los Angeles, and the California Institute of Technology.

HAROLD J. ASHE
Los Angeles, Calif.

Traffic Accidents

THE vital importance of correct signalization has again been amplified by K. W. Mackall in charge of the Signalization Division, Crouse-Hinds Co., Syracuse, N. Y. Mr. Mackall points out that in medium sized cities there may be 332 fire alarms, and in the ensuing fires four persons might be killed, 3 injured. With an appropriate loss of say $29,600.

In this same hypothetical city, same year, there may be 465 traffic accidents where 4 persons are killed, 202 injured, and a financial loss of $505,000. This city's appropriations for the fire department might be $166,000 whereas the appropriations for traffic control could only amount to $26,500.

"Yes, We Have No Parking Meters"

MINNEAPOLIS (population 492,870) has a fine system of parking meters, likes them, and finds them both a financial and a traffic asset. In a short time the meters paid for themselves; most of the net income now is profit to the city.

Detroit still struggles along, nursing its official prejudice against meters of any kind. We admit the initial opposition, cause of this prejudice, arose from the folly of salesmen for competing meter makers, who had the idea that every public official must somehow be bought. The nasty odor of graft polluted the air even before the work of the Ferguson grand jury was begun.

But we still have hopes that under new conditions a new approach to this idea can be adopted in our city government. Much valuable time and money have been wasted as a result of Detroit's failure to take a practical view of the question. The increasing volume of evidence from other cities should be a warning. There may still be time to save us from the embarrassment of adding no-parking meters to our list of civic blunders—in which we can't forget garbage incineration and a wait of twenty years before passage of the zoning ordinance.

—*The Civic Searchlight* of Detroit Citizens League.

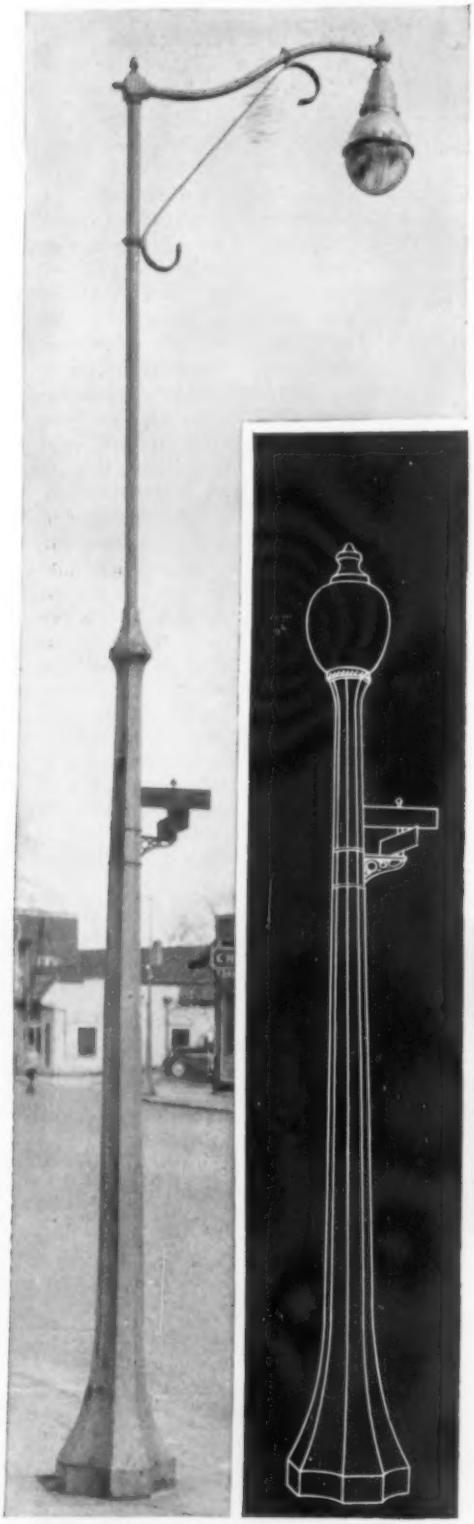
Transportation Plans

CITIES must be free from serious street congestion if they are to become good places in which to live and do business. This can be done only if each form of transportation is planned and provided to take care of that part of the job it can do best. It therefore becomes essential to consider *all* local transportation facilities together and in relation to future urban development, in order to be able to determine the actual *need* for any one kind of service.

Both carriers and communities face the problem of terminal consolidation and relocation—the carriers because of present inefficiency and high costs of terminal operations, and the communities because of the need for removing one serious cause of interior street congestion and urban blight.

Highways, transit, airports, and other transportation terminals need to be planned on a metropolitan-wide basis, and the metropolitan authority which is required should naturally be concerned with all forms of transportation.

—From the 1944 Report of the Committee on Highways and Transportation of the American Society of Planning Officials.



LIGHT Directed at the Sky is INEFFECTIVE on the Street

MODERNIZE WITH L-M LUMINAIRES . . . YOU CAN DO IT INEXPENSIVELY

If your street lighting system is of the old-fashioned type that directs 50% of your light at the sky instead of on the street, you can modernize now at little cost.

Convert to L-M Luminaires which distribute light over a wide area, produce maximum visibility and minimum glare. The change can be made easily, using your present wiring system, standards, current regulators, and control equipment.

L-M modern Luminaires are scientifically designed to direct light to give greatest illumination on the ground. This is accomplished by use of a reflector and an enclosing refractor element.

L-M Field Engineers will be glad to show you how quickly, conveniently, and economically your lighting system can be made more efficient.

For full information contact your nearest Line Material sales office or write to Line Material Company, Milwaukee, Wisconsin.

Send for this booklet on modernization. It tells you how you can convert your existing street lighting system into a modern system at little cost.

By changing fixtures, as shown at the left, this city acquired MODERN LIGHTING

★

Line Material Company is one of the oldest and largest manufacturers of street lighting equipment. The L-M line of street lighting is complete in every respect—standards, brackets, luminaires, transformers, control and protective equipment.

★

For proper maintenance, L-M offers a complete line of Replacement Parts to fit all standard makes of street and protective lighting equipment—reflectors, sockets, porcelain heads, refractors, and globes. L-M can supply these Replacements on short notice.

LINE MATERIAL
STREET LIGHTING EQUIPMENT

L-M DISTRIBUTION EQUIPMENT INCLUDES: **Distribution Transformers • Fuse Cutouts and Fuse Links • Lightning Arresters Oil Switches • Pole Line Hardware • Line Construction Specialties • Underground Equipment • Fibre Conduit • Street Lighting Equipment**

Getting the Most from an Outdoor Lighting System

By EDGAR B. KARNS

Manager, Street, Aviation and Marine Lighting Application Department, Westinghouse Electric Mfg. Co., Cleveland, Ohio

STREET lighting equipment is designed to give many years of dependable service when properly operated and systematically maintained. A better understanding of the purpose and performance of the elements that comprise the system make operation and maintenance easier.

Series Circuits—A series circuit differs from the common multiple circuit in that the lamps are connected in series with a single wire, whereas in a multiple circuit the lamps are connected between two conductors. Another major difference between series circuits and multiple circuits is the voltage of the circuit. In a series circuit the voltage across a single lamp is very low, but the load circuit voltage is equal to the voltage of all lamps in the circuit (single lamp voltage X number of lamps). For example, a 6,000-lumen 6.6-ampere series lamp is rated at 49.9 volts. If the circuit contains 60 lamps, then the load voltage is 49.9 x 60, or 2,994 volts. To this must be added certain losses. The regulator loss is on the order of 5 to 10 percent and the line loss, 6 or 7 percent. The load voltage is therefore increased 5 percent of 2,994 and 7 percent of 2,994 or 360 volts, bringing the supply voltage to 3,354 volts.

Due to the internal reactance in a regulator the open-circuit voltage will be on the order of 25 percent more than the normal secondary load voltage. Therefore, the "live" metal parts of a fixture are insulated to withstand this condition. This is termed "flashover" or "creepage."

Constant Current Regulators—Regulators are used to maintain a constant current on a series lighting circuit under all conditions of load. Constant current is maintained by automatically varying the air gap between the primary and secondary coils. The secondary coil is mounted on a lever arrangement so that it will move up and down to adjust current to load conditions. Outdoor regulators are similar in appearance to conventional distribution transformers and are usually mounted on poles near the lighting circuits which they energize. They should always be properly protected. Protective relays are essential for disconnecting the primary should an open circuit fault occur on the secondary thus preventing high voltage open circuits. Lightning arresters and primary customs are always a good investment.

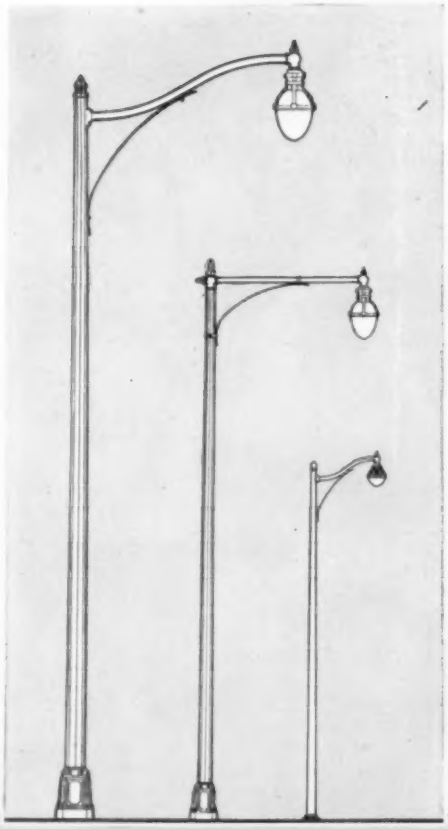
High Power-Factor Constant-Current Regulators—High power-factor regulators are essentially the same as standard regulators except they are equipped with built-in capacitors for primary power-factor correction. This type is recommended on installations where it is desirable to maintain a high power-factor load and minimum kva on the primary line.

Regulator Load—A small overload does not injure a regulator. However, full light output from the lamps will not be obtained if the regulator is loaded beyond its rated capacity. The

Modern luminaires on Water Street, Pittsburgh, Pa., and modern street lighting in Manitowac, Wis.

In Your Postwar Plans for Better Street Lighting

Specify Union Metal Tapered Steel Standards



THERE'S nothing better than steel for strength, permanency, and ease of maintenance. And there's nothing better than Union Metal tapered tubular steel standards for economical installation, ease in handling, and attractive appearance.

Designed by street lighting engineers, built by skilled craftsmen, and backed by 36 years of leadership in street lighting equipment, Union Metal standards are acknowledged the standard of good street lighting practice everywhere.

Show this page to your utility's street lighting specialists and ask them for details of the modern street lighting systems especially designed to fit the needs of *your* town. Or write direct to The Union Metal Manufacturing Company, Canton 5, Ohio.

●

The three street lighting standards shown here are from a line of more than 50 styles and sizes which will be available to you when war ends. Free catalogs on request.

UNION METAL

Largest Producers of Street Lighting Standards

moving coil will try to adjust for overload and, as a result, the two coils will be together, having reached the limits of their travel and the current on the secondary will begin to drop, and the lamps will be dim.

Control—It is desirable to use primary control on constant-current regulators so the unit will not be on the line when the lights are off. The control should be in the form of an oil switch either manually operated, remote controlled by a pilot circuit, or automatically controlled by a time clock.

On a series system it may be desirable to keep the voltage down on a portion of the circuit, such as on a bridge. This can be done by the use of a group series transformer which will isolate that portion of the circuit and give low open secondary voltage on the group series transformer.

Where it is desirable to keep the voltage down on individual lamps on a series circuit, an isolating transformer is used. This usually is designed for individual lamp operation and must have a rating equal to the lamp rating with which it is to be used.

Series Multiple Circuits—It is sometimes desirable to operate a multiple lamp, such as a floodlight or a warning light, from a series circuit. This is done by use of a series-to-multiple transformer. Due to the power factor of this type of transformer it is not desirable to operate a number of such transformers on a series circuit. Before adding to a given circuit, the primary input of the series multiple transformer should be checked with the manufacturer and a check of the present loading on the regulator to determine if additional load can be added.

Film Cutouts—A film cutout is the "fuse" of a series circuit. It is mounted in the socket and is parallel with the lamp. The rating of the cutout depends on the lamp used. Its rating for minimum breakdown is always in excess of the operating voltage of the lamp. So as long as the lamp burns the cutout acts as an insulator between the socket prongs. But when the filament of the lamp fails there is an open circuit on the secondary of the regulator and a rise in voltage. If the circuit remained open the maximum voltage reached would be the open circuit voltage of the regulator in use. However, the film cutout serves to restore the circuit after lamp failure by short circuiting the prongs of the socket. Therefore, the film cutout is a small but very important part of a series circuit. It should operate in 2 to 3 cycles after the lamp filament opens, thus preventing high voltage rise on the circuit. Its operation is the reverse of a fuse. That is, it limits the voltage (not current), breaks down, and becomes a conductor of electricity when its breakdown voltage is applied.

The film cutout should, when broken down, make a solid connection with no arcing. If there is arcing much damage can be caused. Arcing results in heating which in time burns up the socket and receptacle. It also causes radio interference.

Trouble Shooting

Trouble: Lamps fail to burn, even dimly.

Possible Cause: Primary oil switch may not be on. Pilot circuit may be faulted. Time clock may have failed. Operating mechanism of primary oil switch may be out of order. Primary fuse cutout may have dropped out. Primary lead may be open.

Trouble: Lamps burn, but dimly.

Possible Cause: Regulator may be overloaded. Secondary connection may be poor. Poor cable insulation may cause leakage to ground. Regulator moving mechanism may be out of order.

Trouble: Lamps burn at normal brilliance except one or two which burn dimly.

Possible cause: Film cutout may have partially failed. Voltage may be leaking to ground. There may be a breakdown in the isolating transformer. Lamp may not be correct size. Lamp may be near the end of its life.

Trouble: Film cutout fails but lamp is not burned out.

Possible Cause: Improper cutout may have been used. Abnormal line surges may have occurred. Lamp may be loose in socket.

Trouble: If water gets into fixture.

Possible Cause: Bracket threads may not be properly red leaded. Joints may not be properly gasketed.

Trouble: Abnormal breakage of glassware.

Possible Cause: Fixture may be over-lamped. Holder may not accommodate glassware properly. Glassware may not be for that particular fixture. External vibration may be abnormal. Damage may be due to external causes beyond control.

Trouble: Sockets and receptacles are burned and pitted.

Possible Cause: Connections may not be tight. Cutout may not break down completely. Voltage may leak across socket. Socket may not fit receptacle properly. Lamp may not make contact in socket.

Trouble: Abnormal deterioration of metal parts.

Possible Cause: Atmosphere may contain gases or vapors that attack metals.

Care and Maintenance of Outdoor Equipment—A program of complete inspection maintenance provides better performance and greater efficiency at lower operating cost. Such a program should include the following:

1. Clean glassware on regular cleaning schedule. Dirty glassware will reduce light output 40 to 60 percent.

2. Replace lamps on regular schedule. If lamps are allowed to remain in service until they fail, the light output may drop 30 percent.

3. Paint all exposed metal surfaces properly. This applies particularly to poles, brackets, and luminaires.

4. Check electrical parts of luminaires periodically. Loose connections cause heating and burning of the current-carrying parts. In time, loose socket connections may cause complete failure of the socket and receptacle.

5. Replace immediately such parts as: hard or broken gaskets, burned sockets, worn or bad lead wire and cracked globes.

6. Constant-current regulators require very little attention. An occasional check to see that the oil level is proper and that the regulator is not overloaded is advisable.

7. A check of secondary current should be made from time to time to see if proper current is being delivered to the lamps. A slight-over-current will shorten lamp life. For example 1 percent over current may reduce lamp life by 20 to 25 percent and 2 percent over current may result in 35 to 40 percent reduction in life.

8. Underground cable should be tested for resistance to ground and any weak points repaired before actual failure occurs. If complete breakdown happens an entire section of cable may be ruined.

9. Good maintenance will correct trouble before it develops. It is good insurance against costly breakdowns. Touble-Shooting suggestions appear herewith.

Lighted Play Areas

WE now have four lighted soft ball fields and plan on six more Well lighted, as most of our existing facilities are, we intend to extend lighting because it permits a more intensive and effective use of municipal recreation areas, and to a very large extent contributes to our efforts to improve and protect public properties. We plan in our post-war program to make extensive improvements in the floodlighting of sports fields, playgrounds, picnic areas, parking courts, and important park drives.

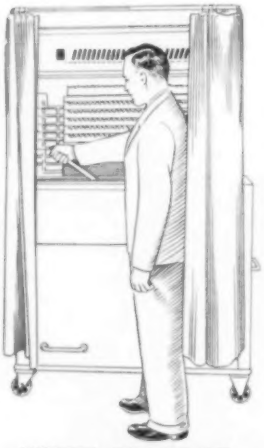
C. C. FLEMING,
Director, Parks and Recreation Department, Houston, Texas.

AUTOMATIC VOTING MACHINES

ARE SIMPLE TO OPERATE *and* ASSURE ABSOLUTE SECRECY

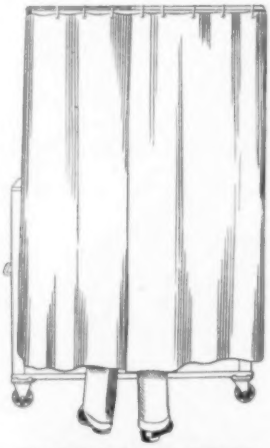
After the voter has been found duly qualified, he steps up to the voting machine and moves the Red Lever from Left to Right (See Figure 1). This action closes the curtains around the voter and guarantees a secret ballot (See Figure 2).

While inside the curtain, the voter indicates his choices by turning down the voting levers, after which he registers his vote by moving the Red Lever from the Right side of the machine to the Left, which action automatically registers his vote for each candidate that the voter has voted for; clears the machine, and opens the curtains for the next voter (See Figure 3).



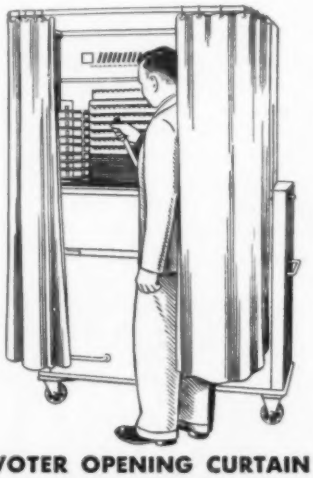
VOTER ABOUT TO CLOSE CURTAIN

Figure 1



CURTAIN CLOSED VOTER VOTING

Figure 2



VOTER OPENING CURTAIN BEFORE LEAVING MACHINE

Figure 3

In the great Presidential contest this Fall, One out of Five voters will cast a 'Mechanical Ballot' that will accurately reflect the voter's intentions, and the results will be available immediately after the close of the polls.

Write for descriptive literature relating to the Modern Way of Voting to

Automatic Voting Machine Corporation

Jamestown 55 ***New York***

Municipal Law Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS, Washington, D. C.

Charles S. Rhyne, *Executive Director*

Airports—Acquisition of Land in Another Jurisdiction

City declared entitled to acquire land for municipal airport purposes where such land is located outside the corporate limits and lying partly in an adjoining state, although it is acting in its proprietary capacity and subject to the law of the other jurisdiction. *McLaughlin* v. *City of Chattanooga*, 177 S. W. (2d) 823 (Tenn. Feb. 5, 1944).

Attorneys—Service Rendered Special Committee—Payment

A special committee created by the City Council to investigate the Civil Service Commission held not to be an "agency" of the city within charter provisions and thus the Council had power to make the city liable for the charges of an attorney employed by the committee without an appropriation or sanction of the Board of Estimate, and an audit of the statement by the Council was not a prerequisite to recovery. *Ellis* v. *City of New York*, 46 N. Y. Supp. (2d) 363 (N. Y. Sup. Ct. N. Y. Co., Mar. 9, 1943).

Beer—Charter Provision Precluding Sale of—Ordinance Limiting Area

Under charter provision precluded the sale of beer within the limits of the City of Harriman by prohibiting sale within a mile of a school or within 1,000 feet of a family dwelling, held that petitioners had no interest in the validity of an ordinance prohibiting the sale of beer within 2,000 feet of any church, school or other public gathering place, and thus could not seek a declaratory judgment as to its constitutionality. *Howard* v. *Christmas*, 176 S. W. (2d) 821 (Tenn. Jan. 8, 1944).

Bondholders—Writ of Mandamus—Change of Officials—Laches

Where a bondholder obtained a writ of mandamus ordering a school board and excise board to provide revenues for the retirement of a delinquent paving assessments and the personnel of the boards changed after the writ was issued, held that failure to institute a new action for two years to compel the levies did not constitute laches because the bondholder may assume that the new personnel will observe the writ. *Johnston* v. *Board of Education of Town of Comanche*, 148 Pac. (2d) 195 (Okla. Apr. 25, 1944).

Contracts—Disposal of Industrial Sewage—Authority of City

Where the city contracted to let a company empty all its industrial sewage into the city's sewage system for a period of fifteen years, held that such a contract was invalid because it attempted to grant a vested right and because the city was only authorized to permit connections with the public system so long as the system would take care of such sewage, but an injunction would not lie because of the danger of injury to the public health. *Erickson v. City of Sioux Falls*, 14 N. W. (2d) 89 (S. D. Apr. 17, 1944).

Elections—Office Holder—Resignation—Re-election

Under charter provision that the election commissioners of the City of Denver should be elected for a certain term and should hold office until their successors are duly elected; where the office holder's resignation was duly accepted, the vacancy was not filled and the holder ran and was re-elected to the office, held that his resignation was effective and thus he was entitled to run for public office, the charter provision dealing with vacancies occurring by reason of the expiration of the term of office. *People ex rel. Rosenberg* v. *Keating*, 144 Pac. (2d) 992 (Colo. Jan. 10, 1944).

Eyeglasses—Regulation of Advertising Prices of

In an action to restrain the enforcement of an ordinance prohibiting misleading advertising and the advertising of prices of eyeglasses, held that the ordinance was invalid as violation of the 14th Amendment in that the evil sought to be corrected was a business evil and did not relate to the public health since it did not attempt to regulate the practice of optometry. *Ritholz* v. *City of Detroit*, 13 N. W. (2d) 283 (Mich. Feb. 24, 1944).

Filling Station—Permits—Traffic Hazard

Where complainant's application for a filling station permit was refused on the theory that a dangerous traffic hazard would be created, held that the recommendation of the engineering and safety department that the permit be refused was not arbitrary and capricious and that an abutting owner's property rights were subordinate to public use of streets for travel. *Collier* v. *City of Memphis*, 176 S. W. (2d) 818 (Tenn. Jan. 8, 1944).

Firemen—One Day Rest Period—Not Confined to Calendar Day

Under a statute providing that no fireman shall be required to be on duty for more than six days in one week, where the 24-hour shift began at 8:00 a.m., and at the end of the shift the firemen were off duty for a similar 24-hour period, held that as to the right to recover for overtime work, the rest period need not be confined to a calendar day so as to begin and end at midnight. *Long* v. *City of Wichita Falls*, 176 S. W. (2d) 936 (Tex. Jan. 5, 1944) Reh. Den. Feb. 2, 1944.

Licenses—Solicitation of Members—Freedom of Speech

Application for writ of habeas corpus was denied where defendant had been convicted of violating an ordinance of the City of Redding prohibiting the solicitation without a license of members in an organization which requires the payment of dues, as such an ordinance does not violate the freedom of speech or discriminate against labor organizations and is not invalid on the ground that membership would be brought about by "force, violence or coercion" as forbidden by the organization. *Ex parte Porterfield*, 147 Pac. (2) 15 (Calif. App. Mar. 28, 1944; Reh. Den. Apr. 11, 1944).

Officers—Induction Into Armed Forces—Salaries—Substitute Officer

Where a police judge was involuntarily inducted into military service before the expiration of his term and another was appointed as substitute, held that the position was not vacated but merely suspended, the police judge was not entitled to receive his salary while serving in the armed forces, and the city was authorized to pay a substitute while the regular officer was absent. *City of Monticello* v. *Tate*, 178 S. D. (2d) 27 (Ky. App. Feb. 8, 1944).

Patents—Infringement—License Tag Sticker for Windshield

In an action of infringement against the city for use of plaintiff's patent embodying series numbers on a frangible film to be used as a license tag for automobiles and affixed on the inner face of the windshield, held that the patent was invalid since the discovery, while a commercial success, was merely a new use or function for a known device. *Warden* v. *City of St. Louis, Mo.*, 140 Fed. (2d) 615 (U. S. C. C. A. 8th Feb. 14, 1944; Reh. Den. Mar. 7, 1944).

Pigeons—Ordinance Prohibiting—Semi-Rural Area

An ordinance prohibiting the harboring of pigeons within the town was held to be unreasonable and thus void where it was shown that portions of the town were undeveloped and semi-rural in nature. *Barkmann* v. *Town of Hempstead*, 45 N. Y. Supp. 675 (N. Y. Sup. Ct. Nassau Co., Jan. 14, 1944).

Policemen—Suspension—Conflict in State Code and City Charter

Where state law provided that the city director of public safety appoint, supervise and hear and determine charges against police officers, and the charter of the City of Cincinnati gave the city manager authority to inquire into the suspension of a member of the police department, held that the state law would dominate and a writ of prohibition would issue against the city manager. *State ex rel. Arey* v. *Sherrill*, 53 N. E. (2d) 501 (Ohio, Mar. 1, 1944).

Railroads—Switching Engines—Required Number of Operators

An ordinance prohibiting the operation within the limits of the City of Duluth of any locomotive unless it shall be manned by an engineer and a fireman was held to impose unusual, unnecessary and arbitrary restrictions where the plaintiff sought to use a Diesel switching engine which allowed its operator an unobstructed 360 degree vision and thus was invalid as having no relation to the public safety or safety of railroad employees. *Northern Pacific Ry. Co.* v. *Weinberg*, 53 F. Supp. 133 (U. S. D. C. D. Minn. Nov. 18, 1943).

Salaries—Minimum Salaries Act—Duly Constituted Fire and Police Departments

In an action by firemen and policemen to recover the difference between the amounts paid them as salaries and the amounts prescribed by a minimum salaries act, held that failure to allege in the complaint that a regularly constituted fire or police department was established by ordinance was cured when the commissioner, who had made the appointments, testified that each was a member of a regularly constituted department. *Kohler* v. *City of Kewanee*, 53 N. E. (2d) 479 (Ill. App. Feb. 16, 1944).

Schools—Furnishing Essential Books and Clothing—Discretion in School Authorities

In an action on behalf of the School City of Crawfordsville for reimbursement of money expended to furnish school children books and clothing essential to their school attendance, held that the statute providing such assistance vested discretion in school authorities as to whom aid should be rendered. *State ex rel. School City of Crawfordsville* v. *Union Civil Tp. of Montgomery County*, 53 N. E. (2d) 159 (Ind. Feb. 28, 1944).

Schools—Segregation of Negroes—Unlawful Discrimination

The practice of the Board of Education of sending all Negro children ready for junior high school to a school centrally located and all white children to the school within the district of their residence held to be an unlawful discrimination against the Negroes since the only reason their admission to a school in their district was denied was because of their race. *State ex rel. Hedgepeth* v. *Bd. of Ed. of City of Trenton*, 35 Atl. (2d) 622 (N. J. Cir. Ct. Jan. 31, 1944).

No. 101 UTILITY SPRAY TANK

Hand Spray Attachment—used for doing patch work and shoulder widening.

Spray Bar—used for small application jobs on roads, streets, highways.

For *Utility* in a Black Top Construction and Maintenance Unit, Littleford Model No. 101 has no equal.

The Model No. 101 was designed primarily to combine three units into one, to do three different jobs with the same unit.

No. 101 has Hand Spray Attachment for patch work. Spray Bar for small application jobs, and Pouring Pot Outlet for crack filling work.

This Utility Unit is heated by two Littleford Vaporizing Torch Type Burners when heavy materials are used. No. 101 will also handle Emulsion, Cut Back, Road Oils as well as Asphalt and Tar. Made in various sizes and capacities.

For a post-war unit to speed up Black Top Construction or Maintenance, be sure you have a Littleford No. 101 Utility Spray Tank.

Pouring Pot Outlet—used just like a kettle, has outlet to fill pouring pots for crack filling work.

BLACK TOP ROAD MAINTENANCE EQUIPMENT
LB
SINCE - 1900

LITTLEFORD

LITTLEFORD BROS., Inc.
500 E. Pearl St., Cincinnati 2, Ohio

Zoning and Planning Notes

Prepared by FRANK B. WILLIAMS
Author of *The Law of City Planning and Zoning*

Board of Health—Offensive Trade

MASSACHUSETTS. — *City of Revere* v. *Blaustein*, Supreme Court, November 30, 1943, reported in 51 N. E. (2d) page 772.

The board of health of the City of Revere passed an order restraining the defendant Blaustein from exercising the trade of painting automobile truck bodies on certain premises in the city because it was of opinion that this was "hurtful to the inhabitants and injurious to their estates and dangerous to public health and is noisome and attended by injurious odors."

In the opinion of the court, this order is valid. The board was not required to assign any place in the city for the exercise of a trade similar to that of the defendant, and could prohibit the carrying on of such a business within the city. The board was not required to give the defendant notice or a hearing before making the order. That order was of a preliminary nature and the defendant could contest its validity in court. The constitutionality of the statutes in accordance with which the board issued its order has long been settled in the affirmative.

None of the allegations of the dependant shows that the action of the board was arbitrary and capricious. If the defendant was the only one affected by the order, that would not render it invalid.

EDITOR'S NOTE.—In testing the validity of regulations forbidding any given activity to be carried on within the limits of a given community, the principles of regional planning should, it would seem, be considered. It would seem to be unreasonable, for instance, so to regulate an industry necessary to a given community as to unload it upon a neighboring community which does not desire to have such an industry within its limits.

The solution for such problems might well be a regional plan which among other things which it accomplishes assigns such activities to their proper place in spite of local objection. No such solution of this and cognate problems would seem ever to have been worked out and given the force of law.

Parks—Billboards

NEW YORK.—*People* v. *Sterling*, Supreme Court, Appellate Division, November 10, 1943, reported in 267 App. Div. 9.

The Adirondack Park is a scenic area of 1,500,000 acres in the northern part of the State of New York. Only a part of this area is in public ownership, the rest being privately owned and used. Within the park are sixteen villages, and it contains a population of about 20,000. This case considers the regulation of signs on private property within the park.

Section 62 of the Conservation Law of the State recites that it was enacted

> "to conserve the natural beauty of the Adirondack Park and to preserve and regulate the said park for public use, for the resort of the public for recreation, pleasure, air, light, and enjoyment, and to keep it open, safe, clean and in good order for the welfare of society";

and it provides that no person shall erect or maintain within the boundaries of the park "any advertising signs or advertising structures or devices of any kind except under written permit from the department." This restriction does not apply to signs erected upon property in connection with a business conducted thereon or signs within the limits of an incorporated village.

The defendant was convicted of violating this statute by maintaining advertising signs on his own property, without applying for a permit. The sign was erected before the passage of the statute.

The defendant asked to have a jury determine, as a question of fact, whether his signs interfere with the public use of the park for recreation and pleasure, or if the real purpose of the statute is the preservation of the esthetic; and whether the classification permitting signs in incorporated villages and upon land advertising business on property in connection with a business conducted thereon is reasonable.

The Court rules that the distinction as to a sign advertising a business conducted on the premises where it is erected and signs within incorporated villages, the governing bodies of which are in general control of streets, and the like, is not arbitrary, and is a question of law and not of fact; as is also the statement that the signs affect only the esthetic sentiments of the public; and therefore the statute is unconstitutional.

The broad question of constitutionality of esthetic regulation is still awaiting determination by the highest court of the State of New York, and this tribunal, not being that highest court, does not decide it. This court does, however, recognize the fact that there has been a softening of the former rigidity of the courts in this country on this subject, but considers it unnecessary in this case to decide the constitutional question, as the state agency in charge of the scenic area in question has reasonable power to control the size and location of signs and the defendant could constitutionally be required to apply for a permit for such sign as the statutes provide; which he has not done.

Justice Bliss, concurring with the opinion of the court, adds some further reasons of his own for his concurrence:

> "There is a direct relation between the preservation of the natural scenic beauty of the Adirondacks and the maintenance of the health and mental composure of the citizens of the state. • • • The question is not solely esthetic. It involves the health and welfare of the people of the state as a whole. Rest cures are not effected by the contemplation of a row of ugly billboards. They may be brought about, however, by a sojourn in unspoiled natural surroundings."

EDITOR'S NOTE.—This case is one of the many of late years in this country which shed light upon the question of constitutionality of regulation under the police power for purely esthetic reasons, but does not decide it. Similar to the regulation in this case are the statutes and ordinances prohibiting or restricting advertising signs within the neighborhood of parks, parkways and scenic highways.

It is interesting to observe that there is no requirement in the statute that the signs, to be subject to its regulations, shall be visible from any public place.

License Fee for Use of Streets by Non-Resident

TENNESSEE.—*De Lay* v. *City of Chattanooga*, Supreme Court, October 10, 1943, reported in 174 S. W. (2d) p. 929.

An ordinance of the city of Chattanooga, in the state of Tennessee, imposed a license fee of $5 per annum on passenger automobiles using the streets of the city. One of the defendants, who was a resident of the State of Georgia, challenged the validity of the ordinance on the ground, among others, that, as to non-residents it impedes and places an additional burden on interstate commerce contrary to the commerce clause of the Constitution of the United States.

The court sustains the ordinance, holding that since the defendant was regularly using the streets of the city, in Tennessee, on his business, he was not engaged then in interstate commerce. A similar ordinance was upheld in *Fox* v. *Mayor, etc., of Morristown*, 174 S.W. 2d, 297; and in *Marshall* v. *State*, 171 S.W. 2d where the automobile owner had established a headquarters in the state, using the streets there regularly two days a week, in the practice of his profession, and therefore was not entitled to the thirty-day exemption for non-residents of the state provided by state law.

Nor does the ordinance offend the interstate commerce clause of the United States Constitution for another reason. A city or state which at its own expense furnishes highways for the use of those engaged in interstate commerce may require compensation for their use, and if the charges are reasonable and uniform, they are no burden on interstate commerce. *Hendrick* v. *Maryland*, 235 U. S. 610. The ordinance here under consideration does not discriminate against non-residents. They are exempt for thirty days unless they have a place of business, headquarters, an office, or are gainfully employed within the state.

Neighborhood Design and Control
An Analysis of the Problems of Planned Subdivision
(See page 101 of this issue)

War News from Italy

—broadcast by the transmitter you might have had!

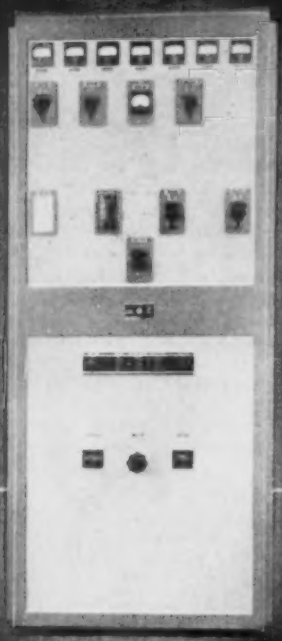
When the Allies invaded Italy the War Department asked RCA Communications, Inc., to build and operate a complete new radio station in Italy.

Men and material were rushed overseas to the Italian site. Night and day RCA engineers labored — the flash of big guns lighting the night horizon.

In 43 days the new station ICA was on the air. On February 1 it began sending America spot news from the Italian front. A notable transmission was the first broadcast from the Anzio beachhead (which was picked up from a low-power transmitter on the beachhead and relayed directly to the U.S. by Station ICA).

The two transmitters installed at ICA are RCA Police Transmitters — the type employed for emergency communications in many American communities. Except for the war your community might be using one of these very transmitters today.

This incident may help you to understand why RCA cannot supply equipment for civilian emergency communications requirements now. But when this war is over, RCA will be in a position to furnish better equipment than ever before. Moreover, RCA engineers will help you right now to plan an effective emergency communications system for postwar installation.



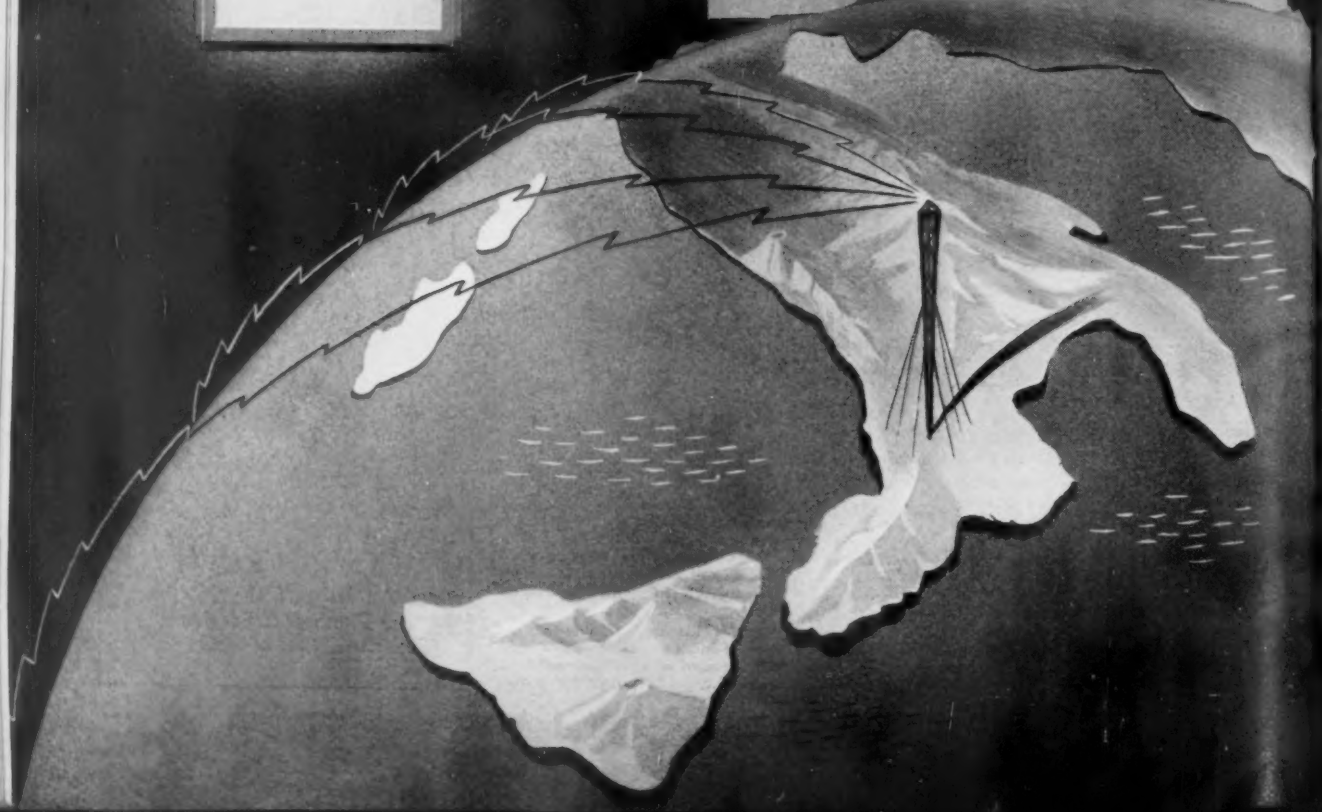
RCA Transmitter used by station ICA

RCA

RADIO CORPORATION OF AMERICA

RCA VICTOR DIVISION - CAMDEN, N. J.

LEADS THE WAY.. *In Radio.. Television.. Tubes.. Phonographs.. Records.. Electronics*



Conventions—When and Where

Sept. 18-20—Topeka, Kan.
League of Kansas Municipalities. Annual Convention. (Municipal Auditorium.) Exec. Dir., John G. Stutz, Capitol Federal Bldg., Topeka, Kan.

Sept. 19-21—Mammoth Cave National Park, Ky.
Kentucky Municipal League. Annual Meeting. (Hotel Mammoth Cave.) Exec. Sec., Carl B. Wachs, c/o University of Kentucky, Lexington, Ky.

Sept. 19-21—Sacramento, Calif.
League of California Cities. Annual Conference. (Hotel Senator.) Sec.-Treas., Chas. Schwanenberg, Hotel Senator, Sacramento, Calif.

Sept. 19-22—Poland Spring, Maine
New England Water Works Association. Annual Meeting. (Poland Spring House.) Sec., Frank J. Gifford, 615 Statler Bldg., Boston, Mass.

Sept. 21-22—Denver, Colo.
American Water Works Association—Rocky Mountain Section. Annual Conference. (Hotel Cosmopolitan.) Sec., O. J. Ripple, Supt. of Filtration, R.F.D. No. 2, Littleton, Colo.

Sept. 24-26—Roanoke, Va.
League of Virginia Municipalities. Annual Conference. (Hotel Roanoke.) Exec. Sec., Harold I. Baumes, 902 Travelers Bldg., Richmond, Va.

Sept. 24-27—Chicago, Ill.
American Cemetery Owners' Association. Annual Meeting. (Edgewater Beach Hotel.) Vice-Pres., Roy Hatten, 408 South Oak Park Ave., Oak Park, Ill.

Sept. 24-27—St. Paul, Minn.
American Public Works Association. Public Works Congress. (Hotel St. Paul.) Exec. Dir., Frederic Bass, 1313 E. 60th St., Chicago, Ill.

Sept. 25-27—Indianapolis, Ind.
American Institute of Park Executives. Annual Convention with American Park Society. Exec., Sec., Will O. Doolittle, Box 422, Rockford, Ill.

Sept. 26-27—Albany, N. Y.
Municipal Electric Utilities Association of New York State. Annual Meeting. (Hotel DeWitt Clinton.) Sec., T. J. McKee, 200-212 East Third St., Jamestown, N. Y.

Sept. 28-29—Jackson, Mich.
Michigan Municipal League. Annual Meeting. (Hotel Hayes.) Dir., Herbert A. Olson, 205 South State St., Ann Arbor, Mich.

Oct. 1-4—Chicago, Ill.
Institute of Traffic Engineers. Annual Meeting. (Hotel Sherman.) Sec.-Treas., W. Graham Cole, 60 John St., New York 7, N. Y.

Oct. 2-4—Boston, Mass.
International Municipal Signal Association, Inc. Annual Meeting. (Hotel Statler.) Sec., Irvin Shulsinger, 8 East 41st St., New York 17, N. Y.

Oct. 3-5—New York, N. Y.
American Public Health Association. Second Wartime Public Health Conference. (Hotel Pennsylvania.) Exec. Sec., Dr. Reginald W. Atwater, 1790 Broadway, New York 19, N. Y.

Oct. 3-5—Des Moines, Iowa
National Association of Assessing Officers. National Conference on Assessment Administration. (Hotel Ft. Des Moines.) Exec., Dir., Albert W. Noonan, 1313 E. 60th St., Chicago, Ill.

Oct. 3-5—Chicago, Ill.
National Safety Council. National Safety Congress and Exposition. (Hotels Sherman, Morrison and La Salle.) Exec. Vice-Pres., Ned H. Dearborn, 20 North Wacker Drive, Chicago 6, Ill.

***Oct. 4-5—Milwaukee, Wis.**
Wisconsin Chiefs of Police Association. Annual Conference. (Hotel Schroeder.) Sec., R. K. McCarty, Kaukauna, Wis.

***Oct. 5-7—Atlanta, Ga.**
Georgia Water and Sewage Association. Annual School. (Municipal Auditorium.) Sec.-Treas., Van P. Enloe, Rt. #5, Box 363, Atlanta, Ga.

Oct. 12-14—Pittsburgh, Pa.
Pennsylvania Sewage Works Association. Annual Conference. (William Penn Hotel.) Sec.-Treas., Bernard S. Bush, c/o Department of Public Health, Kirby Health Center, Wilkes-Barre, Pa.

Oct. 12-14—Pittsburgh, Pa.
Federation of Sewage Works Associations. Annual Meeting. (William Penn Hotel.) Sec., W. H. Wisely, 325-26 Illinois Bldg., Champaign, Ill.

Oct. 12-17—Chicago, Ill.
International City Managers' Association. Annual Conference. (Medinah Club.) Dir., Clarence E. Ridley, 1313 E 60th St, Chicago, Ill.

Oct. 15-18—Kansas City, Mo.
National Association of Commercial Organization Secretaries. War Conference. (Hotel Muehlebach.) Exec. Sec.-Treas., Miss Elizabeth Glenn, 1615 H St., NW, Washington, D. C.

Oct. 17-19—Austin, Texas
American Water Works Association—Southwest Section. Annual Meeting. (Hotels Driskill and Stephen F. Austin.) Sec.-Treas., George J. Rohan, P.O. Dr. 449, Waco, Texas.

Oct. 18-19—Milwaukee, Wis.
League of Wisconsin Municipalities. Annual Convention. (Hotel Schroeder.) Sec., Frederick MacMillin, Madison, Wis.

***Oct. 19-21—North Platte, Neb.**
League of Nebraska Municipalities. Annual Convention. (Hotel Pawnes.) Sec.-Treas., C. E. Beals, 310 Continental Bank Bldg., Lincoln, Neb.

Oct. 23-24—Kansas City, Mo.
American Water Works Association—Missouri Valley Section. Annual Meeting. (Hotel President.) Sec., Earle L. Waterman, Room 104, Engineering Hall, University of Iowa, Iowa City, Iowa.

Oct. 24-26—Los Angeles, Calif.
American Water Works Association—California Section. Annual Conference. (Hotel Biltmore.) Sec., Blair I. Burnson, P. O. Box 720, Oakland 4, Calif.

***Oct. 25-26—Peoria, Ill.**
Illinois Association of Park Districts. Annual Convention. (Hotel Pere Marquette.) Asst. Dir., Miss Majorie Dickinson, 537 South 4th St., Springfield, Ill.

Oct. 25-27—Chicago, Ill.
The American Municipal Association. Annual Conference. (Hotel Blackstone.) Exec. Dir., Earl D. Mallery, 1313 E. 60th St., Chicago, Ill.

Oct. 26-27—Parkersburg, W. Va.
American Water Works Association—West Virginia Section. Annual Meeting. (Hotel Chancellor.) Sec., J. H. Harrington, Dir., Division of Sanitary Engineering, State Dept. of Health, Charleston 5, W. Va.

Oct. 30-31—Pittsburgh, Pa.
Engineers' Society of Western Pennsylvania. Annual Water Conference. (Hotel William Penn.) Chairman, H. M. Olson, Hotel William Penn, Pittsburgh, Pa.

***Oct. 30-31—Columbia, Mo.**
Missouri Water and Sewerage Conference. Annual Conference. (Tiger Hotel.) Sec.-Treas., W. A. Kramer, State Board of Health, Jefferson City, Mo.

Oct. 31—Nov. 2—Peoria, Ill.
Illinois Municipal League. Annual Convention. (Hotel Pere Marquette.) Exec. Dir., A. L. Sargent, 537 So. 4th St., Springfield, Ill.

Nov. 1-3—Chicago, Ill.
Civil Service Assembly of the United States and Canada. Annual Conference on Public Personnel Administration. (Hotel Stevens.) Acting Dir., J. J. Donovan, 1313 E. 60th St., Chicago, Ill.

Nov. 2-3—Toronto, Ont.
Canadian Institute on Sewage and Sanitation. Annual Convention. (Royal York Hotel.) Sec.-Treas., Dr. A. E. Berry, Dept of Health, Parliament Bldg, Toronto, Ont., Canada.

***Nov. 2-3—Augusta, Maine**
Maine Municipal Association. Annual Convention. (Augusta City Building.) Staff Sec., Mrs. Ethel N. Kelley, 97 Water St., Hallowell, Maine.

Nov. 2-4—Atlantic City, N. J.
American Water Works Association—New Jersey Section. Annual Meeting. (Hotel Madison.) Sec., C. B. Tygert, Box 178, Newark, N. J.

***Nov. 2-4—Atlantic City, N. J.**
South Jersey Association of Water Superintendents. Joint Meeting with New Jersey Section AWWA. (Hotel Madison.) Sec., Walter Spencer, 2707 Bethel Ave., Merchantsville, N. J.

Nov. 8-10—Philadelphia, Pa.
American Water Works Association—Four States Section. Wartime Conference with the Pennsylvania Water Works Operators' Association. (Hotel Benjamin Franklin.) Sec.-Treas., H. Lloyd Nelson, 1624 Lincoln-Liberty Bldg., Philadelphia, Pa.

Nov. 8-10—Philadelphia, Pa.
Pennsylvania Water Works Operators' Association. Joint Conference with Four States Section AWWA. (Hotel Benjamin Franklin.) Sec., I. M. Glace, 22 South 22nd St., Harrisburg, Pa.

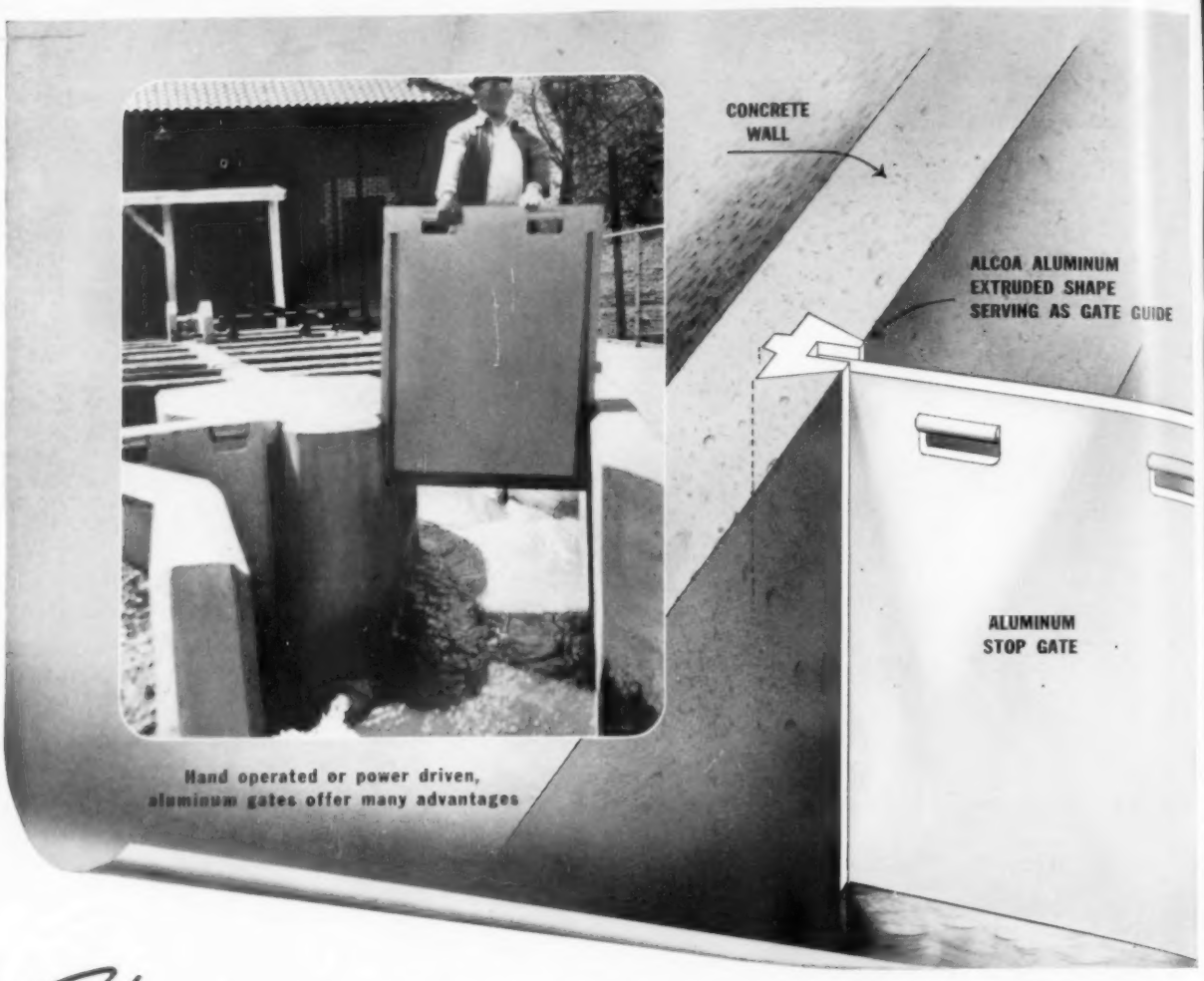
***Nov. 9-10—Little Rock, Ark.**
Arkansas Municipal League. Annual Convention. (Robinson Memorial Auditorium.) Exec. Dir., Glenn G. Zimmerman, City Bank Bldg., North Little Rock, Ark.

***Nov. 14-15—Richmond, Va.**
American Water Works Association—Virginia Section. Annual Conference. (Hotel John Marshall.) Sec., W. H. Shewbridge, State Department of Health, Richmond, Va.

Nov. 14-15—Watertown, S. D. (CORRECTION)
League of South Dakota Municipalities. Annual Convention. (Hotel Lincoln.) Sec., R. D. Falk, University of South Dakota, Vermillion, S. D.

Nov. 14-15—Watertown, S. D. (CORRECTION)
South Dakota Water and Sewage Works Conference. Annual Meeting. (Hotel Lincoln.) Sec.-Treas., Glen J. Hopkins, Dir., Division Sanitary Engineering, State Board of Health, Pierre, S. D.

* First appearance on this page.


CONCRETE WALL
ALCOA ALUMINUM EXTRUDED SHAPE SERVING AS GATE GUIDE
ALUMINUM STOP GATE
Hand operated or power driven, aluminum gates offer many advantages

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Hand operated or power driven, stop gates are much less a problem when aluminum's in the picture. With aluminum gates in aluminum guides, for example, there's no rusting to cause freezing of these parts. No scrambling for crowbars when an emergency shouts, "Open up in a hurry!"

Lighter weight aluminum gates require less power for opening, whether manpower or motor. They're popular with operating personnel. Aluminum's ability to resist corrosion assures longer life for equipment. It's popular with maintenance departments and with the men who pay for upkeep.

The guide pictured in the above sketch is an Alcoa Aluminum extruded shape, designed to key itself into the concrete cast around it. Delivered to the erection site in long lengths, it is sawed into suitable sections right on the job. Other standard Alcoa shapes are available.

You haven't been able to get aluminum for such purposes recently. Winning the war comes first. But aluminum is now being used for other-than-war purposes, as the manpower situation permits. Our representatives will be glad to discuss the availability of aluminum with you. ALUMINUM COMPANY OF AMERICA, 2172 Gulf Building, Pittsburgh 19, Penna.

ALCOA ALUMINUM

Nov. 16-17—New York, N. Y.
NEW JERSEY STATE LEAGUE OF MUNICIPALITIES. Annual Conference. (Hotel New Yorker.) Exec. Sec., James J. Smith, 808 Trenton Trust Bldg., Trenton, N. J.

Nov. 16-18—St. Petersburg, Fla.
AMERICAN WATER WORKS ASSOCIATION—FLORIDA SECTION. Annual Convention. (Hotel Suwannee.) Sec., Dr. A. P. Black, Prof., Agricultural Chemistry, University of Florida, Gainesville, Fla.

*Nov. 20-22—Oklahoma City, Okla.
OKLAHOMA SHORT SCHOOL FOR WATER WORKS OPERATORS. (Municipal Water Treatment Plant.) Sec.-Treas., H. J. Darcy, State Sanitary Engineer, Oklahoma City, Okla.

*Nov. 22-25—Cincinnati, Ohio
HIGHWAY RESEARCH BOARD OF THE NATIONAL RESEARCH COUNCIL. Annual Meeting. (Hotel Netherlands-Plaza.) Dir., Roy W. Crum, 2101 Constitution Ave., Washington, D. C.

*Nov. 27-30—Cincinnati, Ohio
AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS. Annual Meeting. Acting Exec. Sec., Helen Whitaker, 1220 National Press Bldg., Washington, D. C.

*Nov. 27—Dec. 1—New York, N. Y.
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS. Annual Meeting. (Hotel Pennsylvania.) Exec. Asst. Sec., Ernest Hartford, 29 W. 39th St., New York, N. Y.

*December 4-8—Atlantic City, N. J.
1944 NATIONAL RECREATION CONGRESS. Under the auspices of the National Recreation Association. (Claridge Hotel.) Pres., Howard Braucher, 315 Fourth Ave., New York 16, N. Y.

*Dec. 7-9—Harrisburg, Pa.
LEAGUE OF CITIES OF THE THIRD CLASS IN PENNSYLVANIA. Annual Convention. (Hotel Penn Harris.) Treas., Louis G. Heinle, City Hall, New Kensington, Pa.

Deflection and Leakage Tests

(Continued from page 71)

noted that while the leakage after deflection was 40 times that of B, practically all of this was from only one joint, A-4, whereas on B and C all the joints leaked. During leakage tests the two sections not being tested at the time were shut off to make sure that all the water going through the meter went into the section being tested. All sections were shut off for the short time required to make the pressure drop tests, otherwise street main pressure was maintained throughout the test.

Although the double deflection of the pipes exceeded the worst condition that might be encountered in actual pipe-laying practice, it gives a very good picture of the behavior of the three kinds of joint. As might have been expected, lead showed itself to be more flexible but less elastic than the compounds. B remained more plastic as evidenced by joint B-3 and showed more leakage than C before deflection but less after deflection. C was more brittle than B and showed cracks. It would seem logical then to recommend compound B for locations where settlement of pipes is expected.

The Human Side of City Hall

(Continued from page 101)

utilize them. A dash of imagination and a few artistic skills will produce the same results achieved in Greenwich's report.

Some Special Features

Several special features of the Greenwich report deserve particular notice. On the inside of the front cover, "Demobilization in Greenwich" summarizes the action already taken and the alternatives confronting the community in terms of finance—public works or relief. An excellent table of contents follows the title page indicating three subdivisions: Town Services, Town Finance, and Reference Section.

The latter is a useful feature for ready reference by Everycitizen on how his City Hall functions—at a glance. The Greenwich Reference Section includes a town government chart, a list of town publications, the municipal calendar, members of the representative town meeting, and a directory of town officers and of ration and selective-service boards.

Another interesting aspect of the Greenwich report is the order in which the items are presented to the reader. The first page is a note to the citizens of the community on their role in the town's government: "You cannot sit in on the World Peace Conference, but you can sit in on the post-war planning for your own town. . . . If post-war plannng here in Greenwich does not give you the kind of town you want, and you have sat on the side lines, without comment, you will have yourself to blame. So get the facts and form your own opinions. Then tell the town officials . . . and so have a share in shaping the Greenwich of the future." That is representative government by democratic procedures—at its best!

The first agency and its policies described in the report is the Town Plan Commission. Planning problems and progress are outlined and post-war programs presented in some detail. By beginning a report here, every citizen is led to envisage his community and its evolution in the large, to see how his neighborhood fits into the large pattern of the town or city. In these days, when planning for post-war development is a paramount concern of every City Hall, what better way is there of informing City Hall's stockholders of what is being planned and how they can help?

Altogether, the Greenwich report offers many useful and stimulating devices for more effective public reporting. Issued as a "summary" of the full report, these 94 pages are packed with the kind of information the community needs—presented in the way it will read—about its own affairs. It is a first-rate document in every sense of the word and can be profitably utilized by every City Hall in planning its own report.

Recent City Manager Appointments

ROY S. BUCK, a local contractor, has been appointed city manager of Big Rapids, Mich., to fill the vacancy created by the death of City Manager Leland Baxter.

CARL W. GORMAN has replaced George B. Kilpatrick as city manager of Woodstock, N. B., Canada.

JOHN L. GREEN has been appointed city manager of Fort Meade, Fla., to succeed Wilma D. Murdaugh.

WILLIAM E. HANSEN, utilities and construction engineer, U. S. War Department, has been appointed city manager of Monterey, Calif., to succeed Mrs. Christine Raynsford.

HARRY W. LOTT, city clerk and deputy engineer for the past 17 years, has been appointed first city manager of East Lansing, Mich.

LEROY PRIEN, manager of the Water and Light Department of Marion, Kans., has been appointed city manager of Sterling, Kans., effective September 16. He fills the vacancy created by Robert Peart's promotion to Neosho, Mo.

GUY WHITMAN, superintendent, Water Department, Goldsboro, N. C., has been appointed city manager of Roxboro, N. C.

CLARENCE E. RIDLEY
Director, International City Managers' Association

The Municipal Bond Market

Some sales of new issues as reported in August issues of *The Bond Buyer:*

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$190,000	Newark, O., Water Works Imp.	1.0	5.67 Avg.	0.86
2,750,000	Baltimore, Md., Fifth Water Serial	0.87	10.67 Avg.	0.87
110,000	Evanston, Ill., Water Revenue	1.25	5.67 Avg.	0.944
1,000,000	Pittsburgh, Pa., General Public Imp., Series A	1.0	1.20 Ser.	1.026
185,000	Jefferson City, Mo., Airport	1.25	4.75/15.33 O.-A.	1.06
400,000	Houston, Tex., Drainage Sewer	1.25	1-20 Ser.	1.1375
114,000	Utica, N. Y., Water Supply Revenue	2.75	11.17	1.219
175,000	Colonie, N. Y., Latham Water Dist.	1.25	10.50 Avg.	1.22
13,740,000	New York, N. Y., Idlewild Airport Const.	1.75	1-30 Ser.	1.6513
500,000	Miami Beach, Fla., Water Supply	1.75	16.0 Avg.	1.92
1,000,000	Newark, N. J., Public Park	4.75	20.25 Avg.	2.085
17,671,000	Port of New York Authority, N. Y. General and Refunding (Eighth Series)	2.0	19/30 O.-A.	2.2184
438,000	North Arlington, N. J., Refunding of 1944 and Equipment	2.38	11.83 Avg.	2.377

Engineer your runways with CONCRETE to match expected plane loads

Photograph Courtesy Boeing Aircraft Company

Runway design is becoming an increasingly important factor in aircraft performance. Modern planes need runways with the strength and stamina to insure safe, all-weather air transportation.

Concrete runways are accurately engineered to fit their important function. Keeping pace with aircraft designers, concrete paving engineers have developed tested formulas for designing runways of the strength needed without wasteful overdesign. Concrete airport pavements so designed give years of all-weather service with little maintenance expense or need for costly rebuilding.

Engineering design data for wheel loads up to and beyond 150,000 lb. are available to assist designers of concrete pavements for military or civilian airports.

BUY MORE WAR BONDS

PORTLAND CEMENT ASSOCIATION

Dept. 9-4, 33 W. Grand Ave., Chicago 10, Illinois

A national organization to improve and extend the uses of concrete . . . through scientific research and engineering field work

For Orderly Neighborhood Development

Community Builders' Council Organized

UNDER the chairmanship of J. C. Nichols, of Kansas City, Mo., the Urban Land Institute has established a Community Builders' Council, the primary purpose of which is to make available the broad practical experience of outstanding developers of residential communities to all those interested in sound city growth.

Membership embraces a rather small but representative group of outstanding real estate developers who, because of their broad experience and geographical location, are particularly well informed on the multitude of problems that face the creator of new neighborhoods. Included are:

Irvin A. Blietz, Wilmette, Ill.
David D. Bohannon, San Francisco, Calif.
Judson Bradway, Detroit, Mich.
Fritz Burns, Burbank, Calif.
Guy W. Ellis, Miami Beach, Fla.
A. F. Farmer, Tulsa, Okla.
Van Holt Garrett, Denver, Colo.
Robert P. Gerholz, Flint, Mich.
Harold Janss, Los Angeles, Calif.
Robert Jemison, Birmingham, Ala.
Charles E. Joern, Chicago, Ill.
Wilburn K. Kerr, Columbus, Ohio
Duncan McDuffie, Berkeley, Calif.
Harold Mills, Westmount, Canada
Chester A. Moores, Portland, Ore.
John Mowbray, Baltimore, Md.
Norman L. Newhall, Minneapolis, Minn.
J. C. Nichols, Kansas City, Mo.
George F. Nixon, Chicago, Ill.
Forris W. Norris, Boston, Mass.
Hugh Potter, Houston, Texas
Hugh Prather, Dallas, Texas
Hugh H. Russell, Seattle, Wash.
Harry Taylor, East Orange, N. J.
Cyrus Crane Willmore, St. Louis, Mo.

At the initial meeting of the Council, held in June in Columbus, Ohio, members strongly recommended that real estate operators, financial institutions, city planning commissions, and groups interested in the improvement of urban conditions stimulate interest in development of well-balanced neighborhoods rather than permit the continuation of a haphazard construction of small isolated groups of dwellings.

It was explained that a balanced neighborhood should provide for recreational facilities, churches, schools, well-laid-out shopping centers, and a careful blending of dwellings in the various price ranges both for home owners and tenants. Further, in the Council's discussion it was clearly indicated that in order to create successful projects of this kind, a broad practical experience in the development of real estate combined with a thorough knowledge of markets and conditions are quite as essential as the services provided by the land-planning technician.

The importance of the participation of the city planner or expert planning consultant is not, Council members said, to be overlooked. It was the opinion, however, that such services in order to be entirely effective must be supplemented and guided by many practical factors and conditions outside the field of physical planning.

Frequent conferences of this group are to be held, the next of which is scheduled for November in Chicago. A feature of these meetings will be displays of photographs of actual developments, brochures, and informational pamphlets.

Seward H. Mott, Director of the Urban Land Institute and former head of the Land Planning Division of the Federal Housing Administration, is the executive officer of the Community Builders' Council.

Real Estate Boards Warn Against Hodgepodge Development

POINTING out that "unless new construction in the center of cities can be made legally and economically possible, the great building boom of the 1940's will probably take place in the suburbs," the Committee on Post-War Planning and Housing of the New York State Association of Real Estate Boards urges rational development through a combination of public and voluntary controls. In a 38-page report on "Post-War Planning and Housing," signed by Robert H. Armstrong, of New York, as Chairman, and distributed by the Owners' Division of the Association (210 State Street, Albany, N. Y.), the Committee says:

"Here is the great opportunity and danger in the post-war building boom. Whether these new developments take the form of a hodgepodge of scattered communities that fit into no over-all regional plan and that lack of adequate play space, schools and shopping centers will depend on city planning and the vision of post-war builders. The lack of restrictions and controls in many suburban areas gives the builder a free rein—he can either make or mar the countryside when he converts farm and periphery lands into urban communities.

"Hence, there is a great need now for regional planning so that each separate building operation will become a part of a new suburban pattern which will be properly related to the central city and to other suburban communities. The builders who construct a complete community with through traffic routed around instead of through it, with recreation areas, schools and a community house in the center, will create stable and permanent investment real estate values at a cost no greater than random and haphazard building."

A warning against land-overcrowding is one of sixteen recommendations in the concluding section of the report:

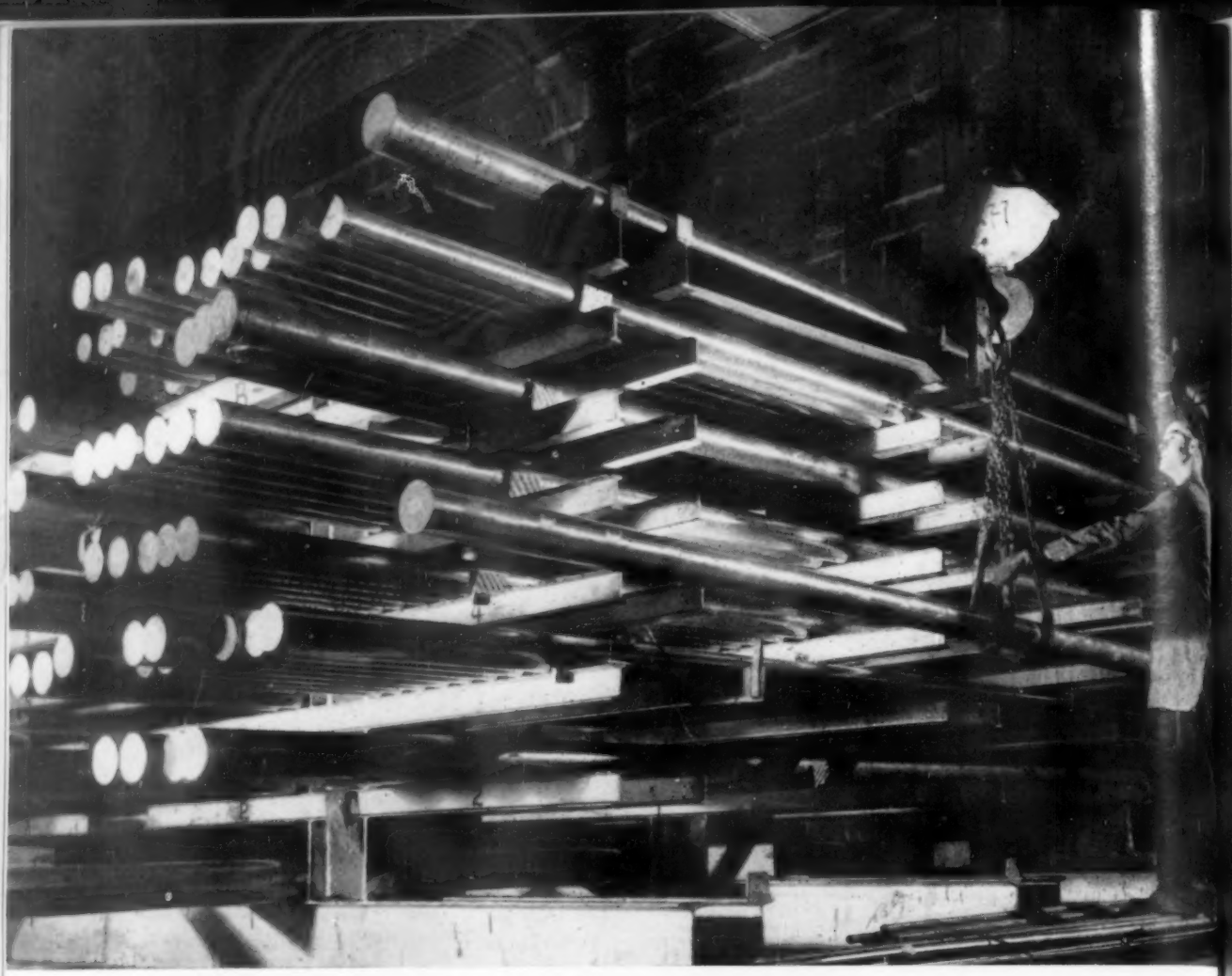
"Excessive heights of buildings or excessive densities in residential developments should be discouraged, as they concentrate the demand upon limited parcels, siphon off values from the other real estate holdings, and are detrimental to the majority of real estate owners."

Let's Get Planning Out of Politics

IT IS foolish to argue over the existence or non-existence of the planning process. It goes on anyway. . . . Our people are not going to stop using their brains for fear they might be accused of that awful practice called 'planning. In fact, there is more conscious, open planning going on right now through state and local planning agencies and such organizations as the Committee for Economic Development and local chambers of commerce and many private business groups than at any previous time in our history. Let us get the question of the existence or suppression of a planning agency out of politics so that we can concentrate the debate on the plans and policies which a planning agency should present. Let us also get the bogey of national planning as opposed to decentralized planning out of the picture. During the last ten years, we have demonstrated that a national planning agency can be decentralized and work 'from the ground up' with full participation and recognition of regional and state viewpoints.

"The first lesson to be learned from the great invasion of France is the importance of team work and advance planning by a general staff. We need a general staff or national planning agency to plan the great people's offensive for Full Employment, Security, and Building America. Plans for demobilization and jobs are a part of the war, not a separate post-war problem."

—From "Demobilization and Jobs," by CHARLES W. ELIOT—A 1944 pamphlet of the Haynes Foundation, Los Angeles, Calif.



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Municipal and Civic Publications

The Power Industry

THE POWER INDUSTRY AND THE PUBLIC INTEREST.—*Factual findings summarized by Edward Eyre Hunt from the report of the research staff. Twentieth Century Fund, 330 West 42nd St., New York 18, N. Y.* 1944. 261 *pp.* $2.

How best to maintain public and profit-making private ownership of power utilities, and at the same time to insure and protect the consumers' interest, is the problem tackled in this report by the Power Committee of the Twentieth Century Fund. Present outmoded means of determining rates, especially the rules embodied in the Smyth *v* Ames case, are criticized for not taking into account obsolescence of power plants in the cost of reproduction. Suggests a division of function between generation and distribution of power, such as that practised by the TVA, thus making regulation easier; and recommends that joint federal-state regional organizations be set up to supervise the power industry and to determine the bases for rates through open conferences and consideration of contemporary conditions.

The Way to Replan a Community

PLANNING OPPORTUNITIES FOR TOWNS IN ILLINOIS.—*By Karl B. Lohmann, M.L.A., University of Illinois Bulletin. Volume 41, No. 40. Published by the University of Illinois, Urbana, Ill.* 1944. 39 *pp.*

A booklet intended to acquaint the citizens of Illinois with the problems involved in replanning a community, with stress upon housing, sanitation, recreation, traffic and transportation, and zoning. Many Illinois towns, erected at a time when the fundamental concepts of planning were unknown, must make structural readjustments in order to serve adequately the requirements of a modern community. Now is the time to plan or replan, the author urges, with the support of citizens who are cognizant of the needs of their community and who, through their understanding of the problems of planning, will elect public officials competent to formulate and execute a comprehensive plan for promoting public health and civic beauty.

Revised Building Code Arrangement

BUILDING CODE ARRANGEMENT *CB* 83, *March* 28, 1944. *Superseding CB* 25.—*American Standards Association, 29 West 39th St., New York* 18, *N. Y.* 13 *pp. mimeo.*

A code arrangement drawn up by the Building Code Correlating Committee of the American Standards Association, for use of municipal committees and public officials in connection with the preparation and revision of local building codes. An outline of a complete series of standard building requirements, under the headings of general building limitations, special occupancy requirements, construction requirements, fire extinguishing equipment, etc.

Fire Codes

NATIONAL FIRE CODES FOR BUILDING CONSTRUCTION AND EQUIPMENT.—*Compiled by Robert S. Moulton, Technical Secretary of NFPA.* 1944. *National Fire Protection Association, 60 Batterymarch St., Boston, Mass.* 512 *pp.* $3.

Compilation of standards and suggestions on the various phases of fire prevention and protection. Instructions on how to protect life from fire, on restricting the spread of fire, on chimneys and smoke pipes, building equipment and details, occupancy standards, construction operations, and fire tests as necessary aids to managers of large plants, office buildings, and institutions. City officials will find the recommendations for ordinances especially helpful.

Sewer Charges

SEWER CHARGES OR RENTALS IMPOSED BY VARIOUS VIRGINIA CITIES.—*Report No.* 278. *League of Virginia Municipalities, 902 Travelers Bldg., Richmond, Va.* 1944. 6 *pp.* 25c. *Free to Virginia Municipal Officials.*

Facts, figures, and ordinances of sewer charges or rentals in twenty-two Virginia cities. A report compiled by the League of Virginia Municipalities, an organization of 146 Virginia cities.

Pedestrian Protection

WINNERS OF PEDESTRIAN PROTECTION AWARDS.—1943 *National Pedestrian Protection Contest. Sponsored by the American Automobile Association, Pennsylvania Ave. and 17th St., Washington, D. C.* 16 *pp.*

A total of 1,059 cities entered the contest in 1943 as compared to 256 in 1937, showing an increased awareness of the pedestrian problem. Awards were given on the basis of the pedestrian accident record, the pedestrian protection program, and war aids such as reducing the traffic hazards to off-duty war workers, constructing new sidewalks, and improving the lighting near war plants. Wisconsin, Oregon, and Arkansas were winners of the state contest and in the 500,000 and over population class, Chicago took first place for cities. Most of the winners had done a good job of public education, employing cartoons in public conveyances, distributing handbills, and giving safety courses in the schools.

The City Manager Plan

THE STORY OF THE COUNCIL-MANAGER PLAN.—*National Municipal League, 299 Broadway, New York 7, N. Y.* 1944. 47 *pp.* 15c.

Recommends the council-manager, or city manager, plan as being the best suited to maintain efficient and economical municipal government. Points out the advantages of this plan over the mayor-council and the commission plans, and explains how city manager government started. Cincinnati and Dayton, Ohio; Fort Worth, Texas; Yonkers, N. Y.; and Kansas City, Mo., are set forth as examples of what can be accomplished with this non-partisan set-up. The report warns that the mere initiation of the city manager is not a cure-all, as the early history of the machine council of Kansas City showed, but there must be a desire to carry out the spirit and intent of this plan. In 1934 Boss Pendergast was overthrown, and by 1940 Kansas City had elected a non-partisan council pledged to charter government and had obtained the services of a nationally known city manager.

The Library as a Community Influence

THE LIBRARY IN THE COMMUNITY.—*Edited by Leon Carnovsky and Lowell Martin. University of Chicago Press, Chicago, Ill.* 1944. 258 *pp.* $2.50.

A compilation of addresses delivered before the Library Institute at the University of Chicago, August 23-28, 1943, by prominent social scientists and planners. Contains analyses of the social structure of four types of communities: the large city, the small city, the suburb, and the rural area. Emphasis is placed upon the important part the school and the agencies for adult education, civilian defense, and the spreading of war information play in the pattern of daily living.

Library administrators, in turn, show how the social forces of community life affect library practice and policy; how the library, by providing books, encouraging their use, and stimulating discussions, facilitates the solution of local community problems and keeps the citizen informed, thereby influencing community life. Library accomplishments in the various types of communities are cited, serving as models for other localities.

Public Spending and Private Enterprise

FISCAL AND MONETARY POLICY.—*By Beardsley Ruml and H. Chr. Sonne. National Planning Association, 800 21st Street, N.W., Washington 6, D. C.* 42 *pp.* 25c.

This pamphlet recommends a fiscal policy which, the authors believe, would enable the government to meet its expenses and at the same time maintain full employment. Messrs. Ruml and Sonne suggest providing incentives for vigorous private undertakings, and supplementing and "meshing" private enterprise with sound public spending and taxation policies. Many of the existing monetary and fiscal policies should be retained, the authors explain, but there must be a fundamental revision of our taxation policy—mainly abolishment of the corporation tax. However, this step should be taken, they hold, only if individual income taxes are assiduously collected and a 5 percent franchise tax laid on all corporations.

Since, the authors explain, the primary objective of a fiscal and monetary policy is the maintenance of a stable currency and sound financial institutions, government spending must be guided by an over-all fiscal policy . . . one that must be prepared to face deficits at the proper times in order to help sustain an economy of high employment. We must not expect too much, however, the authors maintain, from a public works program as a means of supporting high employment. Federal disbursements for public construction should be made in full relationship to the *construction industry*, "one of the most fluctuating elements in the whole economic picture." Public construction should be increased proportionately as private construction decreases, and vice versa. Public works can thus become a means, they hold, of stabilizing the entire industry and of maintaining employment on an even keel.

The recommendations for tax reform are held to be basic to sound public expenditures, and the cooperation of federal, state, and local governments in public works projects necessary for effective effort. A number of other subjects, bearing directly on a sound fiscal policy, are examined in this study among them: the federal budget, savings and investments, monetary policy, and foreign investments.

Population Density Studies

MEASURING URBAN POPULATION DENSITIES.—*A study by William H. Ludlow, prepared under the direction of Henry S. Churchill. Published in* PENCIL POINTS, *June* 1944. 5 *pp. Reprints available from the Citizens' Housing Council, 470 Fourth Ave., New York* 16, *N. Y.* 10c. Complete report. $1.

The first portion of a longer study developed for the Citizens' Housing Council of New York on "Population Densities for New York City." The complete study contains data and proposals of which many relate particularly to New York; this first section is in general applicable to most urban areas. In it an attempt is made to set up definitions which, though they may provide a uniform basis for discussing a subject of which widely varying interpretations have been made, are yet flexible enough to be used as guides for unusual cases.

(See page 59, THE AMERICAN CITY, July, 1944, for an item on the complete study.)

Airparks for Wichita, Kans.

WICHITA'S AIRPARK PLAN.—*Wichita Chamber of Commerce, Wichita, Kans. Illus.* 1944. 7 *pp.*

This forward-looking Chamber of Commerce proposes construction of four in-town airparks to serve the small, non-commercial plane of the post-war. The airparks will serve the down-town shopping district, the mills and factory section, and two residential areas. A system to meet the needs of local air-minded citizens and to draw out-of-state plane owners to Wichita for business and pleasure.

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British vs. American Systems of Realty Taxation

SHOULD THE UNITED STATES ADOPT THE BRITISH SYSTEM OF ASSESSING REALTY?—*Forum Pamphlet Two. Edited by Frederick L. Bird, Director of Municipal Research, Dun & Bradstreet. July* 1944. *Tax Institute, Inc., 257 Fourth Ave., New York* 10. 31 *pp.* 50c.

Representatives of varying shades of opinion in the tax field contribute to this symposium: Arthur Collins, Financial Advisor to Public Authorities, London, England; Clarence Heer, University of North Carolina; Herbert D. Simpson, Professor Emeritus, Northwestern University; Edmund A. Nightingale, School of Business Administration, University of Minnesota; Lawrence G. Holmes, Secretary, National Council of Real Estate Taxpayers; Albert W. Noonan, Executive Director, National Association of Assessing Officers; Harland C. Stockwell, Assistant Executive Secretary, Chicago Civic Federation; Cuthbert E. Reeves, Consulting Engineer, Buffalo; Carl P. Herbert, Director, St. Paul Bureau of Municipal Research; Dixwell L. Pierce, Secretary, California State Board of Equalization; J. M. Leonard, Director of Research, Detroit Bureau of Governmental Research, Inc.; Herbert U. Nelson, Executive Vice-President, National Association of Real Estate Boards.

The discussion turns on the relative merits of the American local tax on the capital value of real estate and the British local "rate" charged to the occupier on the rental value of the property. Mr. Collins opens the discussion with an informative article on the British system, which works well in that country but which, in his opinion would be less applicable in the United States. Of the twelve American contributors to this forum pamphlet, only the two representatives of the real estate interests answer "yes" to the question posed in the title of the pamphlet. The verdicts of the other ten range from a positive "no" to suggestions for a combination of some of the best features of the two systems.

The fact that the British system allows vacant land to escape taxation, and that the substitution of the occupancy tax for the general property tax in the United States would impose a severe burden on housing are among the reasons why most of the symposium participants prefer the American system.

Time for Decision

THE BEST LAID PLANS.—*By Henry S. Churchill. Reprinted from the Spring,* 1944, *issue of The Antioch Review, Yellow Springs, Ohio.* 11 *pp.*

An appeal for proper development of planning techniques. The author points out that although the technology of urbanism is quite advanced, the economics of urbanism lags far behind. Whether we want our cities developed by private or public agencies, or by a combination of the two, it is time to make the decision so that we may plan intelligently for the future.

Opportunities in New York State

NEW YORK MEANS BUSINESS—OPPORTUNITY IN THE EMPIRE STATE.—*Department of Commerce, State of New York, Albany* 1, *N. Y.* 1944. *Illus.* 50 *pp. Free.*

An informative and attractively illustrated booklet on business opportunity in New York State, designed to stimulate economic activity within and to attract capital from without. Points out to businessmen the advantages of a New York location: the diversification of industry, market availability, transportation facilities, labor-management cooperation, and the services of the State Department of Commerce.

Effectively illustrated with maps marking air, water, and railroad routes throughout the state, and colored pictures of its diversified industrial enterprises. Increased productivity at this time is emphasized, the authors say, in order to encourage industrial activity and employment when the drop in war production arrives.

Practical Urban Planning

HORSE SENSE PLANNING.—*By Albert Mayer and Julian Whittlesey. Reprinted from the Architectural Forum.* 1944. 28 *pp. Free on application to Julian Whittlesey,* 31 *Union Square, New York* 3, *N. Y.*

Presents a series of practical problems in urban redevelopment showing "horse sense" solutions side by side with traditional practices, which have been largely responsible for our present congested state of unpleasant urban living. The articles, which are amply and aptly illustrated, deal with solutions to problems within the province of practically every builder, private or public. The recommendations are no substitute for comprehensive city planning, but are intended to supplement rather than supplant action of a broader type.

Great stress is laid on the "under-envelopic" development of urban areas—that is, less than maximum coverage permitted by law—and the authors show how this pays better and includes tangible and intangible improvements upon which safe investments and good neighborhoods rest. Reserving building space for enclosed parks, balconies, and playgrounds has concrete value, the authors hold, in maintaining realty values and establishing competitive rental advantage. The importance of utilizing the roof space as well as the balcony is stressed. "Cities have never properly developed and exploited the type of amenity peculiar to them and certainly have not done so for the bulk of the population." In its most ambitious application, the authors state, horse sense planning seeks to create self-contained neighborhoods within our cities, taking advantage of existing conditions.

Zoning and the Master Plan

SOME BASIC DEVELOPMENT PROBLEMS: ZONING AND MASTER PLAN. *Second Public Report. The Committee on Civic Design and Development, New York Chapter of the American Institute of Architects. May* 1944. 21 *pp.*

This pamphlet has a two-fold purpose: to foster public understanding of the problems involved in zoning and the formulation of a master plan; and to suggest recommendations for the re-zoning of New York City, with stress placed upon the principles which control the relation between population density, land uses, and traffic patterns. By questioning the adequacy of the New York City Zoning Resolution in controlling both the physical development and the distribution of population of the city, and by pointing out the deficiencies in zoning and master-plan procedure, accompanied by recommendations for their improvement, the American Institute of Architects has offered a valuable guide to city officials in checking the city's present tendency towards physical deterioration. The proposals represent marked advancement in the principles and technique of planning and zoning.

Maternal and Child Health

PUBLIC HEALTH NEWS.—*State Department of Health, Trenton, N. J. June,* 1944. 57 *pp.*

Bi-monthly publication of the New Jersey Department of Health containing articles on the Maternity and Infant Care Program, the use of penicillin to treat gonorrhea and syphilis, and helpful notes on certain tropical diseases which may become a public health problem with the return of infected members of our Armed Forces. The symptoms, diagnosis, and treatment for dysentery, malaria, and filariasis are outlined. An article by Katherine Lenroot, Chief of the Children's Bureau of the U. S. Department of Health, notes the twenty-fifth anniversary of New Jersey's Bureau of Maternal and Child Health and reviews its achievements.

Good Water

TASTE AND ODOR CONTROL JOURNAL.—*Industrial Chemical Sales,* 230 *Park Ave., New York, N. Y. July,* 1944. 7 *pp.*

A survey of Canadian municipalities using activated carbon for water treatment giving the methods of application, reasons for its use, and the results obtained. Tests have proved activated carbon to be highly successful in taste control.

Modern Architecture in the U. S. A.

BUILT IN U. S. A.: 1932-1944.—*Edited by Elizabeth Mock. Foreword by Philip L. Goodwin. The Museum of Modern Art,* 11 *W.* 53rd *St., New York, N. Y.* 1944. 128 *pp.*

This catalog of the summer exhibition of contemporary American architecture at the Museum of Modern Art, New York, is not only a guide to the exhibition but a discerning commentary on the principles and practices of modern architecture in the United States during the past 12 years. Elizabeth Mock, editor of the text, points out the new conceptions of space made flexible by differentiation of structure and wall planes; the interrelation of exterior and interior through the use of glass, extending the living space into gardens and the out-of-doors not only in private houses but in factories, apartment houses, and housing developments; the adaptation of building to climate and topography, thereby utilizing rugged as well as flat sites with great success and architectural diversity; and the influence of such new materials as plastics, laminated woods, and metals in the development of architectural forms.

Underlying modern architectural efforts is a search for humanly satisfactory solutions to living and working, solutions in which the spirit of the neighborhood is tempered by the urbanity of modern civilization.

Miss Mock asks: "Can modern architecture answer the need for buildings which will symbolize our social ideals and aspirations? . . . Modern architecture has its roots in the concept of democracy. . . . Democracy needs monuments. . . . There must be occasional buildings which raise the every-day casualness of living to a higher and more ceremonial plane, buildings which give dignity and coherent form to that interdependence of the individual and the social group which is the very nature of our democracy. "Can the desired effect be achieved solely through the drama of bold and imaginative structure and the richness of revealed material? More likely it will be through the complete collaboration of architect, city planner, landscape architect, painter, and sculptor that the best results will be obtained. The monumental possibilities of the city square, for example, have scarcely yet been considered in modern terms. . . ."

Subdivision Planning

NEIGHBORHOOD DESIGN AND CONTROL.—*An analysis of the Problems of Planned Subdivisions.— By Henry S. Churchill, Planning Consultant, and Roslyn Ittleson, Research Assistant, National Committee on Housing,* 512 *Fifth Ave., New York* 18, *N. Y.* 40 *pp.* $1.

(See page 101 of this issue)

Inflation and Taxation

CURBING INFLATION THROUGH TAXATION.—*A volume of addresses in a symposium conducted February* 7-8, 1944, *by the Tax Institute,* 257 *Fourth Ave., New York* 10, *N. Y.* 261 *pp.* $2.50.

The earmarks of inflation, the inflationary potentialities of the public debt, fiscal devices for curbing inflation here and abroad, the possibilities of post-war inflation, and suggested tax policies to meet this threat are the main points covered in this book. The Tax Institute makes no specific recommendations for tax policies, but in the last chapter Leonard Power, Educational Consultant, expresses the need for "economic literacy." With this purpose in mind the members of the symposium set out to inform the readers of what they feel are the relative merits, and demerits, of various tax policies. The sales tax, the social security tax, the individual income tax, spendings tax, and excises are exhaustively discussed. The chapters on the experiences of England, the USSR, Canada, and Italy in meeting inflation are interesting and informative.

There is a section on Inflation in Urban Land by Homer Hoyt of the Regional Plan Association of New York, in which he points out the dangers of over-investment in real estate during boom times.

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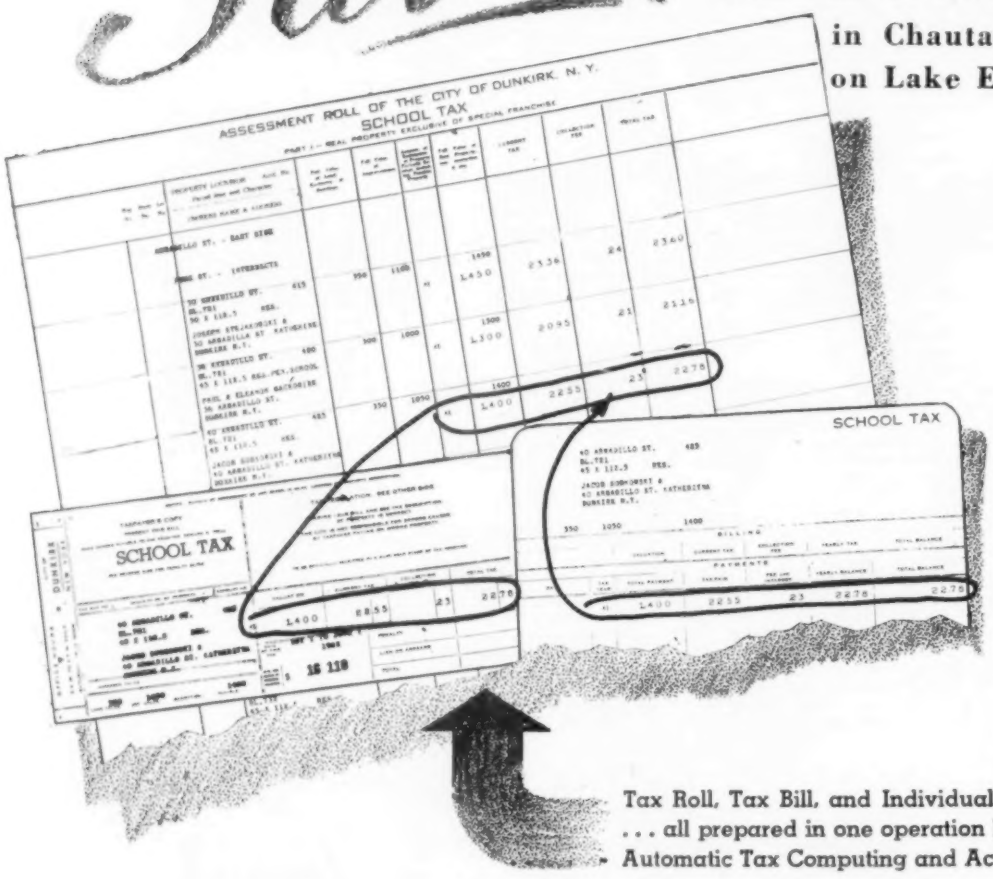

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Municipal Research Bureaus

MUNICIPAL RESEARCH BUREAUS.—*A Study of the Nation's Leading Citizen-Supported Agencies.—By Norman N. Gill. American Council on Public Affairs, 2153 Florida Ave., N.W., Washington 8, D. C.* 1944. 178 *pp. Cloth,* $3. *Paper,* $2.50.

The author reviews the history of the municipal research bureau movement and discusses various types of citizens' research agencies and the activities carried on by these groups. Explains that the main job of the municipal research bureau is to get the facts about local government and its administration, and to recommend improved methods in the administration of finance, public works, personnel, elections, social welfare, etc.

This survey shows that most of the citizen-supported municipal research bureaus are found in cities of 100,000 population and over and that the bureaus are active in educating the public and promoting civic interest. Mr. Gill concludes his work with such recommendations for municipal research bureaus as diversified representation, closer cooperation between the bureau and the university, and a full-time, more adequately paid staff which would make possible more extensive research activities—especially long-term planning and inter-governmental coordination.

Post-War Plans of a City of 7,500 Population

A POST-WAR PUBLIC WORKS PROGRAM FOR THE CITY OF HOMEWOOD, ALA.—*Prepared by Polk, Powell, and Hendon, Engineers, Birmingham, Ala.* 1944. 36 *pp.* 18 *maps.*

A plan surveying existing conditions in Homewood, a city of approximately 7,500 population, covering an area of 3.67 square miles.

Some recommended improvements which, if properly scheduled, will give the city a balanced program of post-war public works construction are: adoption of an ordinance for subdivision control requiring certain uniform standards for private real estate development conforming to a city-wide plan; and another ordinance to modernize city-wide zoning to protect existing real estate values and prevent the spread of blight and slum areas; construction of swimming pools and a system of parks; extension of local street improvements; and a revision of the Building Code.

All these proposals, and more, are within the financial reaches of Homewood. A comprehensive survey of estimated assets and liabiilties has determined the scope of the plans.

Outwitting the Mosquito

MOSQUITO CONTROL.—*By William B. Herms and Harold F. Gray. Revised edition. The Commonwealth Fund, 41 East 57th St., New York 22, N. Y.* 1944. 419 *pp.* $3.50.

The danger of the mosquito, its habitat, the abatement of the nuisance, and protective measures are the subjects covered in this informative book. Drawing upon the experience of communities which have fought a successful battle against this pest, Messrs. Herms and Gray have provided public health officers with valuable pointers on how to combat the mosquito in the various types of terrain from salt marshes, deltas, and irrigation lands to upland streams, reservoirs, and mountain lakes.

Bibliographies

A SELECTED LIST OF REFERENCES ON LANDSCAPE CONSTRUCTION AND MAINTENANCE COSTS.—2 *pp. mimeo.*

A SELECTED LIST OF REFERENCES ON HIGHWAY INTERSECTIONS.—3 *pp. mimeo.*

WAR MEMORIALS.—5 *pp. mimeo.*

Compiled by the Library of the Department of Landscape Architecture and Regional Planning, Harvard University, Katherine McNamara, Librarian, Cambridge, Mass. 1944.

The first two lists are of recent publications under the mentioned categories; the third, War Memorials, is a selected list of readings on the theory and practice of building war memorials, published since 1918.

Other Reports Received

OFFICERS OF LOCAL OFFICIAL URBAN PLANNING ORGANIZATIONS.—*Bulletin No. 8. National Housing Agency, Office of the Administrator—Urban Development Division, 19th and D St., N.W., Washington, D. C. April 10, 1943, revised July, 1944. Mimeo.* 15 *pp.*

PITTSBURGH, PA.—*Annual Report of City Planning Commission.* 1943. Department of City Planning, Suite 919, City-County Bldg., Pittsburgh, Pa. mimeo. 28 pp.

SAN DIEGO, CAL.—*Annual Report of the Department of Social Welfare* for the fiscal year ending June 30, 1944. 704 Civic Center, San Diego, Cal. mimeo. 13 pp.

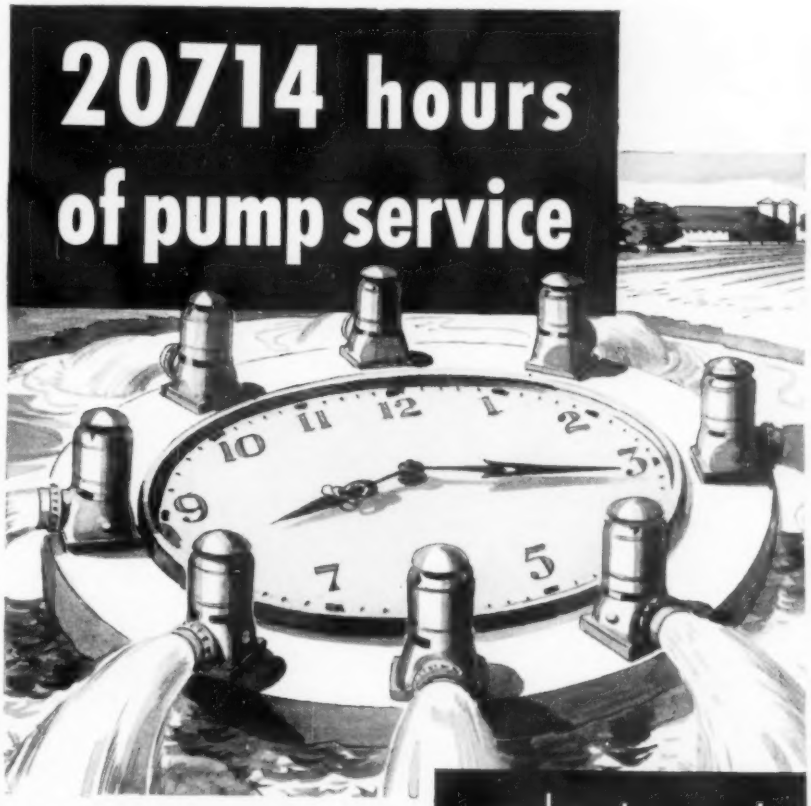
ST. LOUIS, MO.—*The Twenty-Eighth Annual Report of the City Plan Commission.* 1943-1944. mimeo. 29 pp.

NEW HAVEN, CONN.—*Eric Johnston in New Haven.* New Haven Chamber of Commerce, 153 Temple St., New Haven, Conn. 18 pp. Free on request.

PHILADELPHIA, PA.—*Housing in Philadelphia* 1942-1943. Report of the Philadelphia Housing Association, member of the Community Fund of Philadelphia and Vicinity, a citizens' agency working in the cause of better housing. 1717 Sansom St., Philadelphia 3, Pa. 30 pp.

PORT ARTHUR, TEXAS—*Annual Budget of the City of Port Arthur.* July 1, 1944 to June 30, 1945 as submitted to the Mayor and City Commission by Bill N. Taylor, City Manager. 129 pp.

ST. PAUL, MINN.—*Report of the Streets and Highways Committee.* Approved by the Executive Committee of The United Civic Council, St. Paul, Minn., 1944. 72 pp.



Here is a typical Peerless performance record: A Peerless Deep Well Pump was installed January 29, 1939, in one of the "toughest" pumping locations in America. It was pulled June 2, 1944, to permit installation of another Peerless Pump of greater capacity. For almost 5½ years it was operated at an average of 10 hours daily, with a total of 20,714 hours of meritorious service. Never was a single cent spent on repairs. After pulling the pump, inspection revealed no appreciable wear. It has been installed in a near-by well and is expected to give years of additional service with little or no repair cost. This is the kind of service for which Peerless is noted—low cost of upkeep and unfailing dependability. Make Peerless your choice if economy is your objective.

PEERLESS PUMPS

PEERLESS PUMP DIVISION
FOOD MACHINERY CORPORATION

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HI-LIFT
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Other Factories: San Jose 5, Fresno 16, California

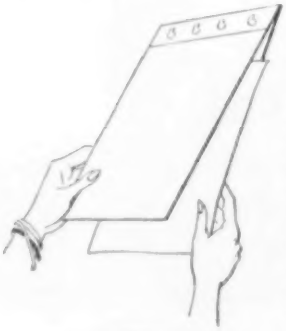
MIMEOGRAPH SERVICE IDEAS

"How to type a stencil"
An easy lesson for beginners

Before you start to type a Mimeograph* stencil make sure the type is spic and span, so each letter will make a perfect impression. Use a stiff bristle brush and repeat this cleaning occasionally during the typing. (Do not use cleaning fluid as it may injure the stencil sheet.)

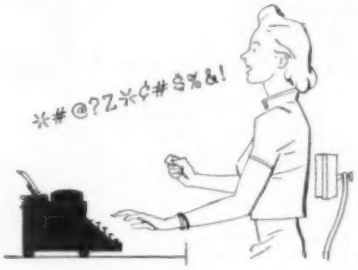
The ribbon must not be used for typing stencils, so tie a little string on your finger so you'll remember to shift the ribbon out of printing position.

Want your copy to look pretty when you're finished? Then plan your arrangement carefully. There are specific instructions in or on each box of Mimeograph stencil sheets to help you.



Now you're almost ready to begin. But first insert the cushion sheet smoothly between the stencil sheet and the backing. Hold combined sheets together at bottom and insert them into the typewriter, with the backing next to the roller. Avoid wrinkling.

All set? Ready, go. Don't be nervous. Just remember, *type slowly, using a staccato touch* (as though the keys were hot). Strike with a little greater force those characters having a large printing surface, such as M and W, and with less force those having a smaller printing surface, as c, o, and the punctuation marks.



Mistakes will happen even with the most expert typist, so don't let it throw you. Learn to make corrections carefully, and no one will be the wiser. Correct each character separately. **1.** Rub each letter gently with the round end of the glass burnisher, using a circular motion. **2.** Apply a thin but complete coating of Mimeograph correction fluid over the error with a single vertical stroke of the brush. **3.** Allow fluid to dry from 30 seconds to a minute. **4.** Use a normal or slightly lighter touch in typing the correction.

Easy, wasn't it? And what a satisfaction to turn out a good-looking job!

Mimeograph duplicator

*MIMEOGRAPH is the trade-mark of A. B. Dick Company, Chicago, registered in the U. S. Patent Office.

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News and Illustrations

Items of Interest to City, Town and County Officials and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings

Note how popular this monkey jungle is with the younger generation.

Monkey Jungle for Child Development

Child development specialists have long recognized the need for physical exercise in building a sound well-developed body. The war too, has shown that physical exercise is a prerequisite to mental alertness in a soldier. So, to meet the problems of life it is even more important that from a very early age a child be given the opportunity for big muscle exercise that his growth be normal and healthy. Therefore, every effort should be made to provide for exercise which will not only insure a child's physical development but encourage physical and mental agility as well.

Manufacturers of playground equipment logically build equipment to meet the normal needs of the play-life of the children. Among the most popular devices is the Monkey Jungle manufactured by the Recreation Equipment Co., Anderson, Ind. It meets the needs for climbing, instinctive in children. It is sightly, durable, weather-proof and safe, and has unusual capacity. The design and construction are entirely modernized.

Protection for Pedestrian Traffic

Municipal officials and traffic engineers looking for a means of controlling pedestrian traffic at school crossings, congested street crossings, industrial plants and other intersections that constitute a problem in their community, will be interested in the Automatic Protect-O-Arm manufactured by the Southern Switch & Signal Company, Shreveport, La.

The design of this traffic control feature has been patterned after the standard railroad crossing gate with the addition of a standard intersection signal light placed on the top of its stand. Operating mechanism is a straight bronze spur gear drive with final reduction through a nickel cast iron worm wheel and nickel steel worm. Gear shafts are chrome nickel steel, heat treated; main gate arm shaft of steel operates in self-lubricated bronze bearings. Ball and radial thrust bearings absorb any end thrust, while mechanical safety limits prevent raising of the arm when it should be down. If energy is still applied after the arm reaches either extreme position, it is impossible to strip the gears or move the arm until the reversing switch or lever is thrown.

Illustrated printed matter may be secured by writing to the manufacturer.

Official of Welsbach Engineering Dies

John A. Little, Comptroller of Welsbach Engineering and Management Corp., 1500 Walnut St., Philadelphia 2, Pa., died at his home in Philadelphia on July 27 at the age of 54.

Mr. Little joined the organization in 1906 as an office boy and, outside of two years in the army during the first World War, continued his association uninterrupted with the Welsbach Corp. and its subsidiaries such as the Kitson Co., Ozone Processes, Inc., and Welsbach Street Lighting Co.

He was elected Assistant Secretary of the group in 1940, and became Comptroller in 1941.

James M. Brodbeck, District Manager of the Welsbach Street Lighting Co. at New York, has been appointed Division Manager at Chicago, according to an announcement from Morse DellPlain, President. Mr. Brodbeck will supervise the operations of the Welsbach Street Lighting Co. in Chicago, St. Louis, and Kansas City.

Etnyre Flushers Available for Urgent Need

City officials in immediate need of street flushers will welcome the news that sanitary street flushers, manufactured by E. D. Etnyre & Co., Oregon, Ill., are available for urgent civilian use, though Uncle Sam still has first call because of the many uses to which he puts this machine.

This flusher, called the "Machine of a Dozen Uses," has proved a versatile instrument for city street departments. Sewer cleaning, street flushing, surface sprinkling, pumping out basements, tree spraying, fire fighting, flushing away snow and slush, and watering shrubbery are among its most common uses.

Employment of the Etnyre Sanitizing Flusher accomplishes a cleaning job in one trip, irrespective of parked cars. The spray, which can cover streets up to 42 feet in width, washes away dirt from the central traffic zone, then with high pressure streams all the waste is forced to the gutter and into the sewer. Statistics have shown that the actual bacterial count of street dust can be reduced 65 percent by use of this flusher, thus leaving streets refreshingly clean and cool.

The spray from this flusher washes right into the curb in spite of the parked cars.

PACKING THE PUNCH... to the China Sea

Tarawa . . . Kwajalein . . . Biak . . . Saipan . . . Guam—the roll call is long of the island strongholds that have reeled under the powerful punches of American naval task forces, driving relentlessly toward the Philippines, the China Sea, the Asiatic mainland and Japan.

This crushing naval power ranges far because it takes its bases with it . . . a triumphant achievement of farsighted planning, building, equipping and supplying.

A traveling base is made up of fleets of supply ships, cargo ships, tankers, ammunition ships, transports, hospital ships, repair ships and other auxiliary craft in support of the fighting fleet. Traveling bases make modern task forces self-contained, fit for weeks of action in vast stretches of sea without turning back to friendly ports.

Maintaining this huge, complicated naval organization involves statistical, figuring and accounting work that never ends. Burroughs machines help here, as in hundreds of other wartime operations, performing important calculations, producing vital records.

BURROUGHS ADDING MACHINE COMPANY · DETROIT 32

Burroughs

NORDEN BOMBSIGHTS—Years of experience in precision manufacturing are enabling Burroughs to render an extremely important service to the nation by producing and delivering the famous Norden bombsight—one of the most precise instruments used in modern warfare.

★ ★ ★

FIGURING AND ACCOUNTING MACHINES are also being produced by Burroughs for the Army, Navy, U. S. Government, Lend-Lease and those business enterprises whose requirements are approved by the War Production Board.

Back the Bunch Who Pack the Punch!
BUY ANOTHER WAR BOND TODAY!

FIGURING, ACCOUNTING AND STATISTICAL MACHINES • NATIONWIDE MAINTENANCE SERVICE • BUSINESS MACHINE SUPPLIES

Sales Manager Appointed for Motorola Radios

Wm. H. (Bill) Kelley has been appointed General Sales Manager of Galvin Mfg. Corp., 4545 Augusta Blvd., Chicago 51, Ill., manufacturers of Motorola radios.

Wm. H. Kelley

Mr. Kelley recently resigned as Regional Manager of the San Francisco district for RCA. His association with that organization goes back the past 20 years during which time he was an important sales executive in the company. Prior to his connection with RCA he spent two years in the sales department of Garod Radio.

In making the announcement Mr. Galvin stated that the management of the Motorola sales and products organization is otherwise unchanged. Elmer H. Wavering will continue to head the Car Radio Division, Walter H. Stellner will continue as Manager of the Home Radio Division, and N. E. Wunderlich remains Sales Manager of Police Radio. Advertising and sales promotion will be handled by Victor A. Irvine.

Belt's

BETTER GRASSES

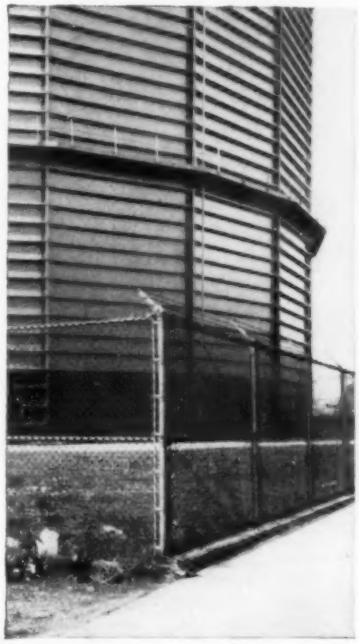
GERMINATION TRINITY BRAND PURITY QUALITY

TRIPLE LABORATORY TESTED FOR Better Lawns

THE BELT SEED COMPANY INC. OF BALTIMORE

Remember **FENCE...**

when you plan that new project



ALMOST every public project needs good sturdy fence. Schools and playgrounds need fence to protect children. Swimming pools, parks, stadiums need it for protection and to control admissions. Power plants and water works needs it to safeguard valuable property.

Fence should be included in the original plans. We believe it will pay you to specify Cyclone Fence. Cyclone's quality is indicated by the fact that it is the world's most widely used property protection fence.

Let us help you. Our trained and experienced engineers are available for consultation without obligation to you. They'll help you with plans and the selection of the proper type of fence for your requirements. And we'll be glad to make recommendations—also without obligation to you.

SEND FOR FREE 32-PAGE BOOK

In the meantime, mail the coupon for our 32-page book on fence. Full of facts and specifications. Profusely illustrated. Complete information on different types of fence, gates, athletic field equipment, etc. Whether your plans are to be carried out now or in the future, you need this free book.

CYCLONE FENCE DIVISION (AMERICAN STEEL & WIRE COMPANY)
Waukegan, Ill. · *Branches in Principal Cities*
United States Steel Export Company, New York

CYCLONE FENCE

UNITED STATES STEEL

Cyclone Fence
Waukegan, Ill., DEPT. E94

Please send me, free of charge, your 32-page book on Fence.

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City..... State.....

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WHY FLINK *Ice Control* IS 6 TIMES FASTER

Spreads at 12 to 20 miles per hour, without stopping until truck is emptied. Driver speeds rapidly toward icy streets and intersections, throws Flink-spreader clutch into operation as spreading area is approached. Drives on . . . spreading as he goes. As danger spot is left spreader clutch is thrown out of operation. Entirely controlled from cab without stopping.

Flink one-man self-feeding material spreader, Model WD3, equipped with Flink clutch control, is today's best answer to the danger of sudden freezes and the shortage of men and equipment. One man driving a Flink equipped truck can rapidly bring under control many miles of icy streets and dangerous intersections. No stopping until truck is emptied. As truck driver spreads along the street he controls the entire operation of the spreader.

Self-feeding. No helper to rest up or warm up. Saves men and expense. Fits all dump trucks. Attaches like original end gate. Spreads forward or backward, full or half-width of streets, thick or thin, all materials up to 1". **Does not limit use of truck.** Truck can be dumped as with original end gate, or spreader can be replaced by original end gate in 5 minutes. When not spreading material use dump truck for any other purpose. Write for complete literature.

FLINK Spreaders are used for road, street and highway work, and for spreading agricultural limestone.

The FLINK COMPANY

502 Vermilion . . . . . STREATOR, ILLINOIS

ARMY-NAVY "E"

We Are Doing Our BEST for UNCLE SAM

We'll Do the Same for YOU

Our business is building pumps. Our ONLY policy is to build fine pumps. When you install pumps "by Aurora," you know that lasting efficiency and dependability are at work on your important liquids handling jobs.

Aurora Deep Well Turbines for all conditions—4" to 24"

NSA Aurora Centrifugal Sump Pump

Type AD Hor. Split Case, Two Stage Centrifugal

Type OD Hor. Split-Case Double Suction Single Stage Centrifugal

APCO Horizontal Condensation Return Unit

This ONLY MOVING PART in the

APCO TURBINE-TYPE PUMPS—the simplest of all pumps. Ideal for small capacity, high head duties. Silent, compact and lasting.

Type GMC Close-Coupled Centrifugal

Type GGU Side Suction Single Stage Centrifugal

APCO Single Stage Turbine-Type

Write for CONDENSED CATALOG OR

SEE OUR CATALOG IN SWEET'S

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA Always PUMPS

AURORA PUMP COMPANY

66 Loucks Street, AURORA, ILLINOIS

The STEWART IRON WORKS COMPANY
CINCINNATI, OHIO

TO OFFICIALS INTERESTED IN JAIL AND PRISON CONSTRUCTION

Stewart has been building jail and prison equipment since 1886.

Although we are engaged 100% in war work, our engineers will be glad to discuss postwar jail and prison plans with you. Steel for this type of construction has not yet been released, but it's not too early to plan for the time when materials will be available.

Hundreds of penal institutions are using Stewart Cells, Bunks, Doors, Window Guards, Locks and Locking Devices, and other products.

Write today! There's no cost or obligation for plans, specifications and estimates. Address The Stewart Iron Works Co., Inc., 1121 Stewart Block, Cincinnati 1, Ohio.

Stewart

Jail and Prison Specialists Since 1886

The S.O.S. Fire Guard showing in the enlargement the "Safety Phlare" which insures free-floating piston action.

Light-Weight Vaporizing Fire Extinguisher

A light-weight vaporizing liquid type fire extinguisher called S.O.S. Fire Guard is offered by the General Detroit Corp., 2270 East Jefferson Ave., Detroit 7, Mich. Since it is only 1 or 1½ quarts, the Fire Guard can also be installed on trucks, cars, boats, and planes for fast action on electrical, oil, and gasoline fires.

One of the outstanding features claimed for this fire fighter is the patented "Safety Phlare" design of the lower end of the pump cylinder. The cylinder is expanded at the bottom to insure immediate free-floating piston action even after long periods of disuse. Yet in the remainder of the cylinder felts fit snugly to insure top operating efficiency. Absence of metal to metal contact in the expanded section eliminates the possibility of piston sticking to cylinder wall.

Additional information may be secured by writing the General Detroit Corp., 2270 E. Jefferson Ave., Detroit 7, Mich.

District Engineer for Asphalt Institute

Bernard E. Gray, General Manager of The Asphalt Institute, 801 Second Ave., New York 17, N. Y., announced the appointment of W. A. Bugge as District Engineer by the Pacific Coast Division for the territory comprising northern California, Oregon and Washington. Offices will be located at 301 Wilcox Bldg., Portland, Ore., and 1304 Fourth Ave., Seattle, Wash.

Mr. Bugge's engineering experiences go back 22 years including posts with the Washington State Department of Highways, County Road Engineer of Jefferson County, and City Engineer of Port Townsend.

Mr. Bugge is equipped to extend the engineering, research, and promotional facilities of The Asphalt Institute to highway engineers and officials. They may also on request freely obtain from this office extensive literature pertaining to asphalt.

North Carolina Section AWWA Cancels Annual Convention

In order to comply with the request of the Office of Defense Transportation to curtail conventions in 1944, the Board of Trustees of the North Carolina Section of the American Water Works Association and the North Carolina Sewage Works Association adopted a resolution, during a recent session, to abandon plans for the 1944 annual convention.

However, "in the interest of full continuity of the important work of the section," it was decided to hold a business meeting of the organizations at the City Hall in Durham on November 14 from 10 a.m. to noon.

The business to be discussed at that time includes a yearly report of the Secretary-Treasurer, reports of the section directors, report giving titles of papers to be published in the Journal, report of the Membership and Fuller Award Committees, award of the Maffitt Cup, and election of officers.

MACHINE SHOP SERVICE that fits your needs

YOUR Automotive Jobber!

He can give you prompt, accurate machine shop and parts service, beyond his normal service on cars, trucks, buses, tractors and other automotive units. His skilled machinists and complete shop equipment are available for work on your other mechanical units. Of course, his complete stock of 100,000 service parts, of tools, equipment and accessories is as close as your phone at all times.

You can depend upon your Automotive JOBBER!

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PARTS • TOOLS • EQUIPMENT
ACCESSORIES • SUPPLIES

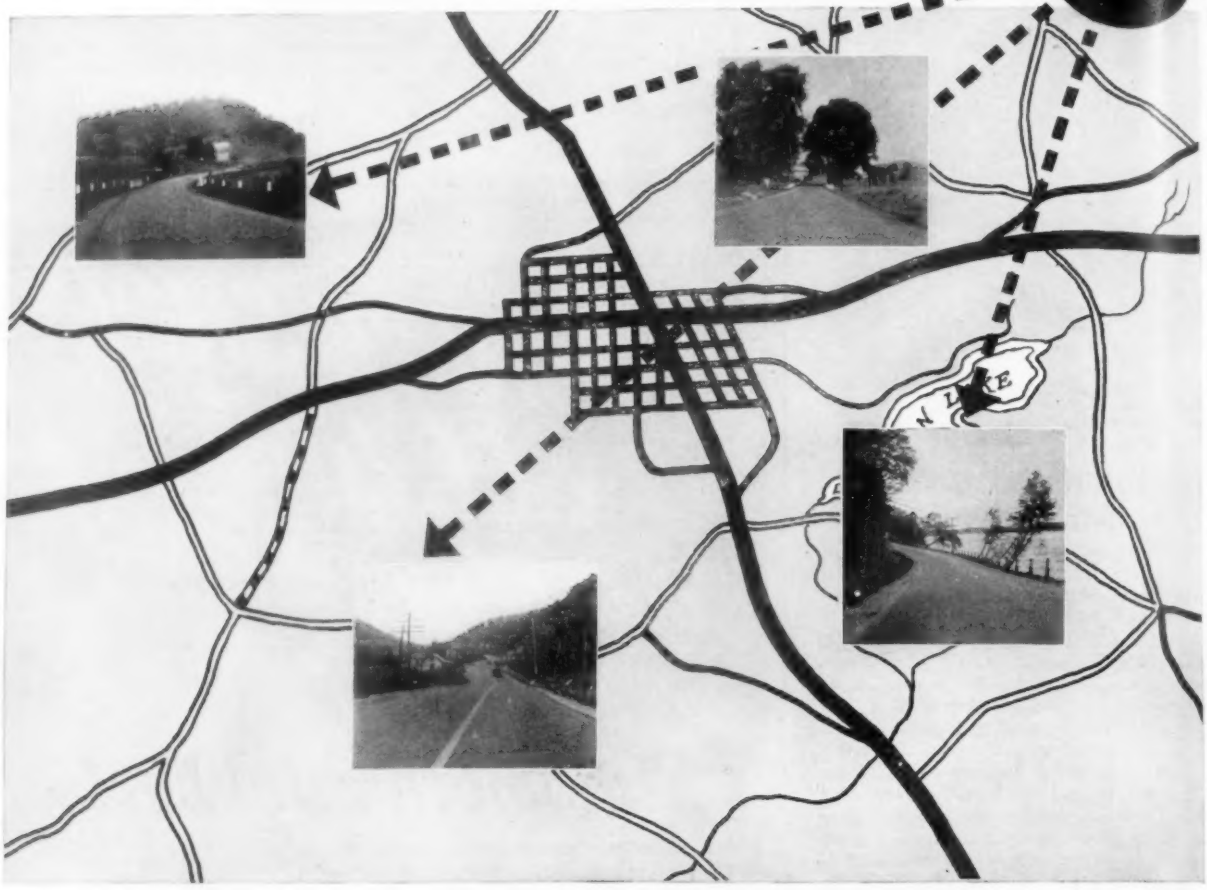
THE COMPLETE ASSOCIATION

Devoted to maintaining and improving the Quality Standards of Service Parts, Equipment and Accessories manufacture, distribution and installation in America's thirty million automotive vehicles, and millions of internal combustion engines, and mechanical equipment.

NATIONAL STANDARD PARTS ASSOCIATION
35th Floor, 8 South Michigan Avenue, Chicago 3, Illinois

POSTWAR HIGHWAY PLANNING?

It should start at these vital spots



THE U. S. Highway industry is already preparing for its greatest job after the war is won, for today's roads are wearing out faster than ever before and much-needed highway improvements have been unavoidably delayed by manpower and equipment shortages.

Especially in the all-important secondary road system, where regular maintenance is a first requirement, worn out roads are costing this country millions of dollars—in excess damage to automobiles and tires, delaying vital shipments of food and munitions, driving thousands of trucks prematurely to junk piles and seriously impeding transportation.

Why wait to make *your* plans for postwar highway work? Call on the services of the Tarvia field man. He can show you how to plan and prepare needed construction, reconstruction, maintenance and repair using local materials and local labor: how to clear the decks for postwar action.

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR STREET, NEW YORK 6, N. Y.

New York . . Chicago . . Birmingham . . St. Louis . . Detroit . . Philadelphia . . Boston
Providence . . Rochester . . Minneapolis . . Cleveland . . Columbus . . Toledo . . Youngstown
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Barrett Tarvia*

*Trade-mark Reg. U. S. Pat. Off.

Gar Wood Centralizes Engineering Departments

As a further step in their overall program to improve the output of war goods and ease the transition to peacetime operations, Glen A. Bassett, President of Gar Wood Industries, Inc., Detroit 11, Mich., has announced the centralization of the company's engineering departments.

Up to the present time the engineers of the hoist and body, winch and crane, tank and road machinery divisions have been in four different locations. Now they have been brought together in the company's main plant and will be adjacent to the executive offices.

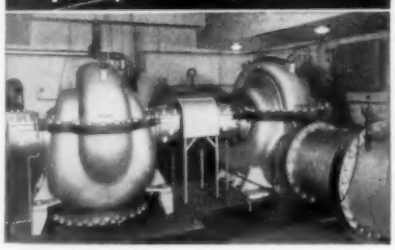
This step follows the recent reorganization in the production set-up involving the creation of the post of Vice-President in Charge of Manufacturing.

Representative for Yeomans in Cincinnati Area

Yeomans Brothers Co., 1433 Dayton St., Chicago, Ill., announces that the Engineering Equipment Co., Cincinnati, Ohio, represents its organization in the Cincinnati area. This territory, recently enlarged, now includes Dearborn County in Indiana, and the northern tier of Kentucky counties facing southwestern Ohio. The company will handle sales of all Yeomans products, including pumps, compressors, and sewage treatment equipment.

F. L. Holliday is head of the firm.

How One Water Supply Pumps Another Supply



At full capacity the De Laval water turbine, at the right, receiving 20,800 g.p.m. of Catskill water under 210 ft. head and discharging to its distribution system against 120 ft. head, drives the De Laval pump at the left operating at 560 r.p.m., which delivers 21,000 g.p.m. of Croton water to its distribution system against 100 ft. head. The positive head at the suction nozzle is 35 ft.

The speed of the unit is automatically regulated. No particular attention is necessary.

De Laval engineers will gladly help in solving your pumping problems.

DE LAVAL STEAM TURBINE CO.
TRENTON 2, NEW JERSEY

FRIDEN

FULLY AUTOMATIC CALCULATOR

Visible Fully Automatic Multiplication...*a patented Fridēn Feature, makes completely Automatic Multiplication a reality.*

Set either factor of any Multiplication problem on the Keyboard. Then enter the other factor in the Multiplier. For either Positive, Negative or Accumulative Multiplication just touch ONE KEY...and presto, the Carriage is automatically positioned, the Dials automatically cleared, the Calculator automatically counts and shifts until the problem has been completed...then finally clears the Keyboard preparing the machine for any subsequent calculation.

Fridēn Calculators are AVAILABLE when applications for deliveries have been approved by the War Production Board. Telephone or write to your local Fridēn Representative for complete information.

Fridēn Mechanical and Instructional Service is available in approximately 250 Company Controlled Sales Agencies throughout the United States and Canada.

FRIDĒN CALCULATING MACHINE CO., INC.
HOME OFFICE AND PLANT • SAN LEANDRO, CALIFORNIA, U.S.A. • SALES AND SERVICE THROUGHOUT THE WORLD

the Big Beam

Turns Darkness into Daylight

THIS PORTABLE ELECTRIC SEARCHLIGHT

Has Many Uses in a Municipality:

FIRE CHIEFS use it for entering dark buildings, rooms or basements, also for lighting fronts of buildings.

POLICE CHIEFS find it useful in dark parkways and alleys.

WATER DEPARTMENTS use it on emergency night jobs—such as repairing a large broken main.

Big Beam provides a brilliant beam giving daylight visibility for any night job or emergency—projecting the beam for a distance in excess of 2500 feet.

Or—an interchangeable lens will diffuse the same volume of light over a wider area.

By use of the Big Beam "Hold-Down," the lamp can be fastened to any flat surface.

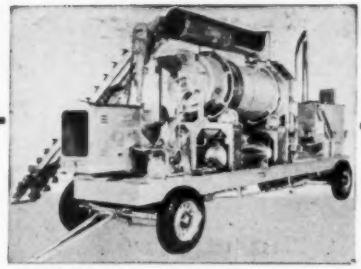
The lamp head can be turned in any direction, and it stays adjusted.

The Big Beam is portable, powerful, dependable, sturdy, shockproof.

Sold through wholesalers.

Send for this free folder.

U-C-LITE MFG. CO.
Department AC
11 East Hubbard St., Chicago 11, Ill.
Gentlemen: Please send me without cost your circular matter explaining the features of the Big Beam.
Name _____
Address _____
City _____ State _____



PORTABLE ASPHALT PLANTS

Write for Catalog

Elkhart **White Mfg. Co.** Indiana

CENTRIFUGAL PUMPS
FIRE HYDRANTS
A.W.W.A. GATE VALVES

Manistee single-stage, double-suction pumps, 75-20,000 g.p.m. capacity

Manistee multi-stage pumps, 50-3500 g.p.m. capacity with heads up to 1600 feet

Write for Bulletins

MANISTEE IRON WORKS CO.

MANISTEE MICHIGAN

MURDOCK SINCE 1853

SELF-CLOSING ANTI-FREEZING HYDRANT

Reliable Outdoor Water Service Devices

For convincing proof look at the service and upkeep cost records in your own Water Service and Park Departments.

"It Pays to Buy Murdock"

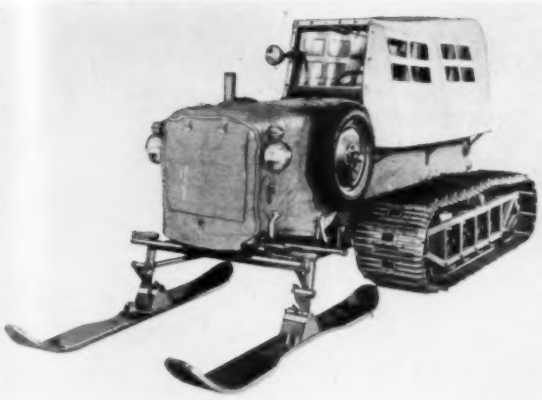
The Murdock Mfg. & Sup. Co.
426 Plum St. : Cincinnati 2, Ohio

ANTI-FREEZING COMPRESSION HYDRANT

LARGE ANTI-FREEZING HYDRANTS 1½" TO 2" INCLUSIVE

"LOCK-LID" STREET WASHERS 3/4" and 1" SIZES

"Air-Lock" ANTI-FREEZING OUTDOOR DRINKING FOUNTAIN



This special snow tractor is practical for either snow travel or highways. The front axle, shown equipped with skiis, can also be fitted with wheels. Note protective covering for motor to prevent freezing.

Trailer-Tractor for Work in Snow

In cooperation with the U. S. Army Ordnance and Army Air Corps, the Allis-Chalmers Mfg. Co., Milwaukee 1, Wis., announces the development and manufacture of a special snow tractor and snow trailer which are being used regularly in Alaska and the Aleutian Islands by our armed forces.

The tractor and trailer were originally constructed for rescue work to aid downed pilots and their crews. The trailer was also put to further use by the Air Corps as a mobile starting unit, containing an aircraft engine heater to assist starting in sub-zero climates. In addition, they serve as a means of transportation for hauling supplies to distant frozen climates. The various trailer units may be equipped with wheels or skis, as conditions warrant.

The fact that the front axle can be equipped with either wheels or skis makes this two-man snow tractor with trailer suitable for either snow travel or ordinary highway work. Long wide tracks with rubber-faced shoes spread the tractor's weight and prevent it from sinking into the snow. The engine has been protected with a heavily insulated hood cover and a special engine preheater.

Eimco Branch Office

The Eimco Corp., Salt Lake City 8, Utah, manufacturers of vacuum filters, announce the opening of a new branch office in St. Louis, Mo.

The new office will be under the management of James K. Russell and is located in the Paul Brown Building.

★FLAGS★

for
POLLING PLACES
★
SPEAKERS PLATFORMS
★
Longest-Wearing U. S. Indoor and Outdoor Flags.
★
Banners of all kinds for decorations.
★
SPECIAL LOW PRICES for Flags and Banners in quantities of six or more. *Ask for Catalog in Color.*

MUNICIPAL AND COMMUNITY HONOR ROLLS
Widest variety — one name to thousands.
Write for Illustrated price list.

AMERICAN FLAG & BANNER CO.
127 N. Dearborn St. • Chicago 2 Ill.

M-SCOPE

Pipe Finder **Leak Survey Equipment** **Leak Detector**

Send for Free 16-Page Booklet

FISHER RESEARCH LABORATORY

Direct Teletype by Western Union PALO ALTO, CALIF.

***Eastern Distributors of* FISHER M-SCOPE *and* LEAK DETECTORS**

Joseph G. Pollard Co., Inc.

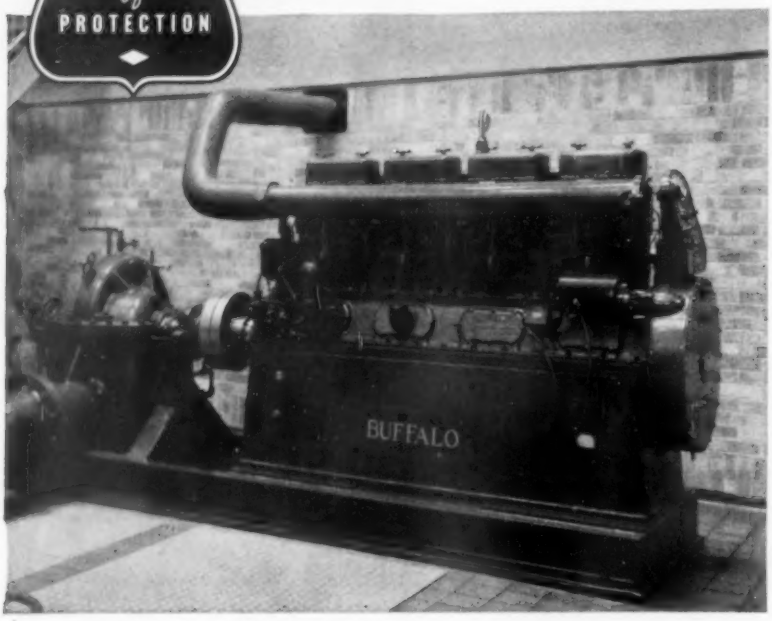
141 ASHLAND PLACE BROOKLYN 1, NEW YORK

PIPE LINE EQUIPMENT

BUFFALO MOTORS

ASSURANCE of PROTECTION

Water Works Installation—City of Saskatoon, Sask. Buffalo Model RAB-8 Engine, 8 cylinders, 6½" bore, 7" stroke, developing 350 BHP at 1500 RPM, driving a Worthington Pump.



TRUSTWORTHY H. P.

THE Name BUFFALO on your stand-by motors in generator or pumping units is assurance of complete protection against a power emergency.

Specializing in this heavy-duty equipment for many years, this Company knows how to build dependable motors fitted to the engineering of their installation.

BUFFALO motor specifications give the proof. Studying them, the engineer will realize that Buffalo builds the right motor for this duty. To meet the needs of any service there is the choice of manual, remote control, or full automatic starting.

Engineers and others interested are invited to write for specification sheets for their files, and if an individual application is proposed, please feel free to consult the men of our staff who have been building and installing BUFFALO Motors for a generation. Remember, trustworthy stand-by equipment pays for itself two ways—in insurance cost savings and in assurance of protection.

BUFFALO GASOLENE MOTOR COMPANY

DEPT. AC-94 BUFFALO 13, N. Y., U. S. A.

BUFFALO MOTORS

ASSURANCE of PROTECTION

BUFFALO ENGINES — 100 H. P. THROUGH 750 H. P.— IN GENERATOR AND PUMPING SETS FOR WATER WORKS — AIRPORTS — COMMUNICATIONS — FLOOD CONTROL — HOSPITALS — INSTITUTIONS — MINES — MOVABLE BRIDGES — THEATRES — SEWAGE PLANTS.

The Tuthill Highway Guard Rail on a bad turn, such as the above, will help deflect a car on collision.

Highway Guard Rail Available Now

The Tuthill Spring Co., 760 Polk St., Chicago 7, Ill., announces that the Tuthill Highway Guard Rail is available for prompt shipment on all orders bearing the "MRO Certification." This means that it may be used without specific approval of the War Production Board wherever the rail is needed as a maintenance or repair item.

In cases where the guard rail is needed for use on a new highway or any new installation, The Tuthill Spring Co. will make application to the War Production Board for approval to fabricate the guard rail needed for each order. Street and highway officials may take advantage of this to complete now any plans they have for installation of this equipment.

Planning Engineer for Water Works Service Co.

Ellwood H. Aldrich, consulting engineer, 500 Fifth Ave., New York 18, N. Y., formerly of Newsom & Aldrich, has become associated with the Water Works Service Co., Inc., as Planning Engineer. This company was recently established as the operating and engineering organization for the water works properties of the American Water Works & Electric Co., Inc., 50 Broad St., New York 4, N. Y.

Mr. Aldrich was formerly associated with the Community Water Service Co. now managed by the American Water Works & Electric Co. For the past several years he has actively been engaged in directing an extensive program of water works construction in the Hampton Roads area of Virginia.

Milton Roy Pumps Appoints Representatives

Milton Roy Pumps, 1300 E. Mermaid Ave., Philadelphia, Pa., manufacturers of step-valve controlled volume chemical and high pressure pumps, has announced the following appointment of new representatives:

For Northern New Jersey: W. K. Sims, 24 Commerce St., Newark, N. J.

Cleveland and Northeastern Ohio: Geo. P. Schumacker, 1120 Chester Ave., Cleveland, Ohio.

For Omaha, Neb., Western Missouri and all of Kansas: J. J. Heinrikson, 421 B.M.A. Bldg., Kansas City 8, Mo.

West Virginia is represented by The Industrial Equipment Co., Charleston 23, W. Va.

Showing the mechanical tamper for use in compacting backfill

Mechanical Tamper for Backfilling

Mechanical tamping of backfill can be effectively utilized by street maintenance men to obtain exactness in compaction. The Gardner-Denver Co., Quincy, Ill., has announced a new Backfill Tamper, Model T-23, designed to meet these exacting requirements.

The ease and smoothness with which the T-23 can be handled by the operator allows him to go over the fill quickly.

Operators will find that the piston-rod packing and the method of pad attachment allow for quick and easy access in the maintenance of the tool. The front head of the cylinder compresses the piston-rod packing as it is screwed on the cylinder, and when the correct compression is reached, a locking pin is dropped in place.

The double taper locking feature of the pad attachment holds the pad securely on the piston rod against all shock and vibration. However, it can be removed without difficulty.

The company points out that there is no danger of freezing of the valve or exhaust if the equipment is used in cold, damp weather.

Penn Salt Organizes Export Department

The Pennsylvania Salt Mfg. Co., Inc., 1000 Widener Bldg., Philadelphia 7, Pa., announces the organization of an Export Department and the appointment of John H. S. Barr as Manager of that department.

The company conducted extensive studies over the past year into the possibilities of post-war business in Latin American countries including Cuba, Haiti, Jamaica, and Puerto Rico and as a result of their findings formed this department. Mr. Barr made a trip to important Latin American countries last year for the purpose of investigating the possibilities of future business in the heavy and specialized chemicals produced by Pennsylvania Salt.

Mr. Barr has been with the company for 15 years in technical and sales capacities.

CIRCUL-AIR

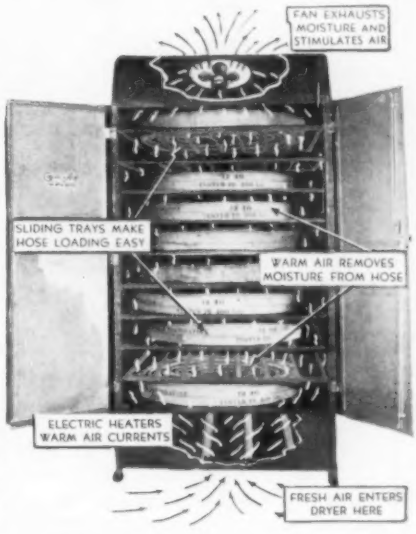
FIRE HOSE DRYER

Saves

1. hose
2. drying time
3. storage space

YOU need no reminding that America's stockpile of hose is limited and must be conserved, but perhaps you do not yet thoroughly realize what a big help CIRCUL-AIR Dryers are in cutting down the need for large hose reserves. *Just a few hours and the hose is dry* and ready for use again . . . and *that quick drying* prevents mildew and rot so *your hose lasts longer.*

The whole operation is so simple and troublefree (as well as space-saving) that you will wonder why you were ever content to get along without one of these Dryers! *How fast?*—From 25 to 50 times as fast as drying the hose in a tower or rack.


FAN EXHAUSTS MOISTURE AND STIMULATES AIR
SLIDING TRAYS MAKE HOSE LOADING EASY
WARM AIR REMOVES MOISTURE FROM HOSE
ELECTRIC HEATERS WARM AIR CURRENTS
FRESH AIR ENTERS DRYER HERE

WRITE: IMMEDIATE DELIVERY.

THE CIRCUL-AIR CORP. 6339 East Palmer Ave. Detroit 11, Michigan

★ ★

Fresh, high quality broom fibres last longer

AFRICAN BASS FIBRES

INDIA PALMYRAH STALKS

The longer mileage you obtain from fresh broom fibres means less time-taking refilling of the broom core and valuable man-hours put to an extra use. The use of fresh, high-quality fibres in your mechanical sweeper is sound economy these days.

We are able to service every need in all types and sizes. We would be happy to receive your request for samples and quotations.

MOUNTAIN HICKORY SPLINTS

STEEL WIRE SWEEPER STALKS

The OTTO GERDAU CO.

82 Wall Street, New York 5, N. Y.

The EDDY Valve

The Eddy Valve has a number of distinctive features which it will pay you to study. For example, the gates are free to revolve on the trunnions, so as not always to seat in the same position.

Write us for further details.

Also manufacturers of the well-known Eddy Hydrant

EDDY VALVE COMPANY

WATERFORD — NEW YORK

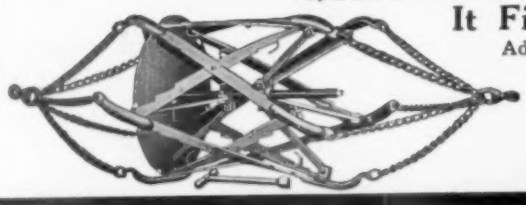
Representatives

Jas. B. Clow & Sons, Chicago, Ill.

National Cast Iron Pipe Co., Birmingham, Ala.

EXPANDING ROOT CUTTER & SEWER CLEANER

Open and in action removing roots and caked sediment like this.



It Fits in on Every Sewer Cleaning Job

Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

Write for our new catalog on complete sewer cleaning equipment.

EXPANDING SEWER MACHINE COMPANY

108 East Walnut St. — Nappanee, Ind.

Cast Iron Pipe

PLAIN CAST OR SPUN CENTRIFUGAL

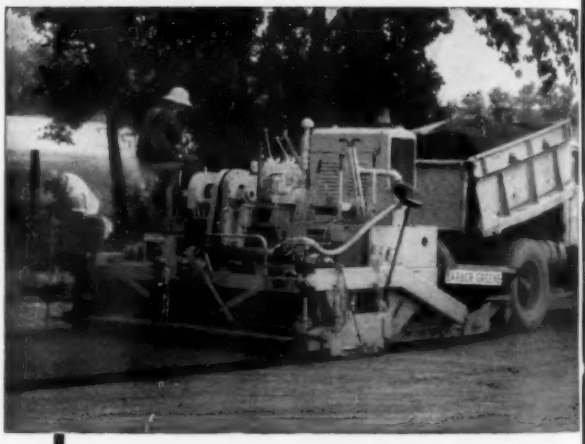
Cast Iron Pipe and Special Castings, Bell and Spigot, Flange, Flexible Joint, Culvert, Milled and Plain End Tubes, Cylinders, Flanged and Bell and Spigot Fittings, High Pressure Fire Service Pipe, Warren Short Body Specials, Threaded End Pipe.

Size 2 to 84-inch

Pipe manufactured in accordance with standard specifications adopted and approved by water works associations and engineers.

Warren Foundry & Pipe Corp.
11 Broadway, New York City

Warren Pipe Co. of Massachusetts
75 Federal Street, Boston, Mass.



★ The Barber-Greene Tamping-Leveling Finisher continues to lay the road by which other jobs are judged. In spite of its low cost operation, the level, uniformly compacted Barber-Greene mat is in a class by itself for excellence and permanence.

Write for Catalog 879

Q-27

BARBER-GREENE

AURORA — ILLINOIS

Weyand Promoted at Minnesota Mining

L. F. Weyand has been promoted to General Manager of the Adhesive and Coatings Division of the Minnesota Mining & Mfg. Co., St. Paul 6, Minn. This is a new post entailing responsibility for all production, sales, research and laboratory activities of that division. He has been General Sales Manager of the division since 1936.

L. F. Weyand

Mr. Weyand has been associated with the Minnesota Mining & Mfg. Co. for 28 years. Under his leadership, the Adhesive and Coatings Division has become widely diversified, both as to the kinds of adhesives produced and the classes of trade served, and has grown into one of the important divisions of the organization.

He will continue to maintain headquarters at the company's factory in Detroit where all adhesive and coating activities have been centered for eight years. The company's executive headquarters are in St. Paul, Minn.

Para-Plastic — for the top seal of Expansion and Dummy Joints. The hot-poured, rubber-like, waterproof seal that conforms to Federal Spec. SS-F-336, C.A.A. Spec. P-605 and the Specifications of State Highway Departments.

Expansion Joints for any purpose—Asphalt, Fiber, Cork and Self-Expanding Cork.

Sewer Pipe Joint Materials —Hot-poured "Vitriflex", ready mixed cold troweled "Tufflex", or Pre-Moulded Belts.

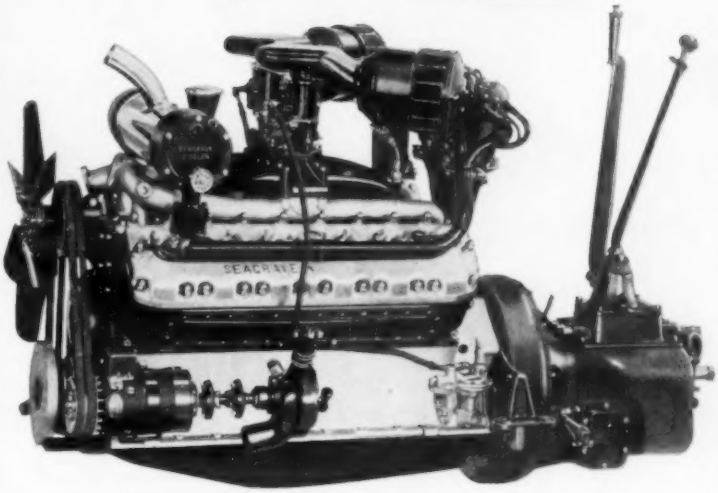
Asphalt Plank—Mineral surfaced, Standard or Industrial.

Literature on request.

SERVICISED PRODUCTS CORP.

6051 W. 65th St. Chicago 38, Ill.

SEAGRAVE V-12



★ **SEAGRAVE V-12** . . . Precision built. Out-performs and out-classes any other type of motor developed for fire protection.

★ **SEAGRAVE V-12** . . . Compact and rigid. Shorter than most 6-cylinder engines of similar power. Greater horsepower with less piston displacement.

★ **SEAGRAVE V-12** . . . The nation's most dependable fire apparatus motor. Smooth, stream-like flow of abundant power.

★ **SEAGRAVE V-12** . . . Built in the Seagrave factory especially for use in Seagrave Fire Apparatus. Longer life . . . trouble free performance.

THE SEAGRAVE CORPORATION, Columbus, O.
Bickle-Seagrave, Ltd., Woodstock, Ont.

THE GREATEST NAME IN FIRE APPARATUS

Heil Aircraft Refuelers

Add Prestige to Municipal Airports and give you these advantages over inadequate pit methods . . .

1 You Save Time On the Ground
Engineering departments spend considerable time and money to increase cruising speeds 5 and 6 M.P.H. to speed schedules. On a cross country trip having several stops, loss of only one or two minutes at each stop wipes out the entire value of increased speed.

2 You Cut Operating Costs
Fueling a plane from a pit means that aircraft must be taxied to the location of the fueling equipment . . . which is considerably more expensive than moving a Heil Refueler to the plane. As competition increases, savings in time and money will become increasingly important.

3 You Lower Your Capital Investment
The installation of adequate facilities of the pit type for refueling a considerable number of aircraft means an investment many times that of Heil equipment to handle the same number of aircraft.

4 You're Ready for Increased Traffic
With permanent installations such as pits, it is often difficult and costly to change layouts as required, to meet the rapid growth of air traffic. Heil Refuelers are flexible and adaptable to your needs.

5 You Have Capacity To Handle Big Loads
Airline operation undoubtedly will be carried on with planes about the size of the DC-3 and DC-4 having fuel capacity of about 822 and 1700 gallons respectively. Famous Heil Trailerized (frameless) tanks have been built in capacities to 6400 gallons for a single unit — 10,000 gals. in trains.

Municipal airport engineers are invited to collaborate in the development of specialized equipment to meet their particular needs.

Write today for further information.

T-108A

ARMY NAVY

THE HEIL CO.

GENERAL OFFICES • MILWAUKEE 1, WISCONSIN

ALL OVER THE MAP!

For 25 years Kelly concrete cased wells have stood the test of time. We have several thousand now in service, covering a territory of 33 states and parts of Canada.

Kelly concrete cased wells are especially adapted for developing large water supplies from sand and gravel formations.

We Guarantee our wells to develop all available water, sand free, to their full capacity.

KELLY WELL CO., INC.
Grand Island, Neb.

BUILDERS
WATER AND SEWAGE WORKS
Equipment

VENTURI METERS
Bulletin 293C
TYPE M and FLO-WATCH INSTRUMENTS
Bulletins 324A and 318A
VENTURI EFFLUENT CONTROLLERS
Bulletin 321A
FILTER GAUGES
Bulletin 329
LIQUID LEVEL GAUGES
Bulletins 326 and 329
SAND EXPANSION GAUGES
Bulletins 335 and 348
KENNISON OPEN FLOW NOZZLES
Bulletin 334A
CHRONOFLO TELEMETERS and CONTROLLERS
Bulletin 320A
TOLEDO-CHRONOFLO CONVEYOR SCALES
Bulletin 322
PROPELOFLO METERS
Bulletin 350

The above bulletins are available to you.
Builders-Providence, Inc.
(division of Builders Iron Foundry)
9 Codding St., Providence 1, R. I.

"BLUE PRINT NOW"

Sincerely Yours,
BUILDERS-PROVIDENCE

ADVOCATE PHOTO

Holding the big "E" pennant are Charles Franck, Holophane President, left; and Commander Jasperson, right.

Holophane Receives Honor for War Production

The men and women of the Holophane Co., Inc. Works at Newark, Ohio, with headquarters at 342 Madison Ave., New York, N. Y., were awarded recently the Army-Navy "E" award for excellence in war production. Ceremonies were held at the Lincoln High School in Newark, Ohio.

Commander Reuben Jasperson, USNR, Cleveland, Ohio, presented the pennant award and Major Robert S. French, Fifth Service Command, Ft. Hayes, Columbus, Ohio presented the "E" pins. Charles Franck, President of the company, made an acceptance speech on behalf of the company, and the "E" pins were accepted by an employee's committee with Raymond Blind acting as spokesman.

Holophane's equipment in the war can be found on landing barges, invasion craft, warships, on flying fields, Army and Navy training stations, and Army hospitals. On the home front the company has been active in the campaign to cut down accidents by proper lighting.

Edgar Hiel Bristol

Edgar Hiel Bristol, President of The Foxboro Co., Foxboro, Mass., died of a heart attack on July 24.

He and his brother founded the company in 1908 as the Industrial Instrument Co. which, on January 1, 1914, became The Foxboro Co. Mr. Bristol participated actively in its affairs, serving as its President throughout its history.

He is credited with more than forty patents, some of them so basic in character as to establish new principles of instrument design and operation. One of the examples of his inventive genius is the helical spring which is the measuring element in temperature and pressure recorders.

New Method of Determining Size of Grease Interceptors

A new scientific method of determining the proper size of grease interceptor to be installed on any type of sink or fixture has been devised by the Josam Manufacturing Co., 301 Empire Bldg., Cleveland, Ohio. This new guide is based upon actual experiments covering a majority of the types of sinks and proving that the size of the interceptor to be used does not depend on the fixtures to be serviced, but upon the rate of flow of the waste water through the interceptor.

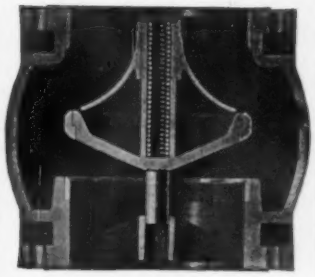
Maximum flow rate is determined by the following formula:

Maximum flow rate in gallons per minute = ¾ *x cubical contents* (inches) ÷ 231 *inches*

This flow rate is kept constant by the introduction of a flow control in every Josam Interceptor. Using the above formula, it is but a simple matter to compute the proper size of Josam Grease Interceptor to install, with the results that a minimum of 95 percent of the grease in the waste water will be trapped. Architects and engineers will especially appreciate this method.

All the above information is included in a new Josam booklet, entitled "Scientific Sizing and Flow Control in Grease Interception." This booklet not only gives sizing data, but includes tables, blueprints and a wealth of other information covering the grease intercepting problems of practically all types of sinks, dishwashing machines and other fixtures. Copies are available on request.

SMOLENSKY VALVES



■ **The Smolensky Radialflow Noiseless Check Valve eliminates water hammer, which assures operating efficiency and noiseless operation.**

Designed to be constructed with a cast iron body, plug, spider, and made with a renewal bronze valve seat or seat of other metal when required.

Specify Smolensky Valves for your water works plant and assure yourself years of trouble-free service.

Economy—Durability

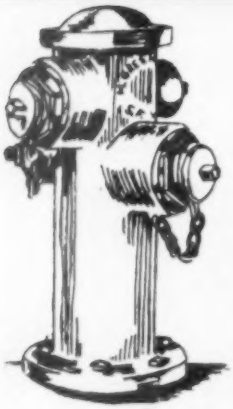
THE SMOLENSKY VALVE CO.
940 BROADWAY, BEDFORD, OHIO

PREVENT RUSTING

Like hundreds of others, your steel tanks too can get lasting protection against rusting with Rusta Restor. Not a "Magic,"—but the proven cathodic (i.e., electrical) method, Rusta Restor maintains the tank in an "electro-negative" state, which not only prevents rusting, but gradually removes the effect of any earlier rusting. Rusta Restor is modest in first cost,—and uses the current required by only one light bulb,—at safe, low voltages. Each installation engineered to the individual tank and water conditions using proven mathematical formulas developed and used only by our engineers. Detailed description of interest to engineers and operating men sent on request. Write today.

RUSTA RESTOR
Division of
THE JOHNSTON & JENNINGS CO.
861 Addison Road **Cleveland 14, Ohio**

A COMPLETE HYDRANT SERVICE



Originators of the CALIFORNIA type of Hydrant, with INDIVIDUAL, integrally constructed globe type valves on all outlets. We have manufactured and sold this type of Fire Hydrant with its various improvements continuously for over seventy-five years. This is the Fire Fighter's Ideal Hydrant for use in non-freezing climates. Sold through your jobber.

FOR THE COMPLETE
Story of Hydrants for all Climates . . .

Send for your
FREE
COPY OF "HYDRANTS BY GREENBERG"

STABILITY
Since 1854

M. GREENBERG'S SONS
765 FOLSOM STREET ★ SAN FRANCISCO, 7

Two happy men closing a 48-in. gate in 10 minutes with a DEAN MECHANICAL GATE OPERATOR, with complete assurance that it is fully protected against damage.

Below: Four tired and unhappy men doing the same job in 1½ hours.

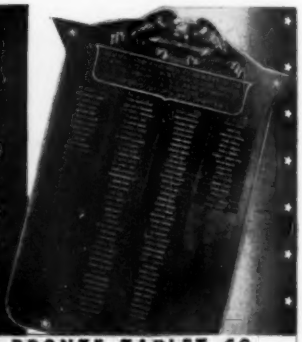
WHICH MAKES SENSE?

PAYNE DEAN & CO., LACONIA, N. H.

HONOR ROLLS

A FITTING TRIBUTE TO THOSE IN SERVICE

Beautiful plaques, many designs, in sizes for any number of name plates. Send for prices and literature.



INTERNATIONAL BRONZE TABLET CO.
36 East 22nd Street — New York 10, N. Y.

GUNITE

NEW CONSTRUCTION—REPAIRS

PRESTRESSED TANKS	STEEL ENCASEMENTS
RESERVOIR LINING	DAM REPAIRS
PEN STOCK LINING	TUNNEL LINING
SMOKE STACK LINING	SEWER REPAIRS

DISINTEGRATED CONCRETE ABUTMENTS RENEWED

REPAIRS TO ALL TYPES OF MASONRY

Write for our Bulletins

PRESSURE CONCRETE CO.
Engineers & Gunite Contractors

1st Nat. Bank Bldg.
FLORENCE, ALA.

6 Avenue B
NEWARK 5, N. J.

General Sales Manager for Pittsburgh Equitable-Merco

Col. Willard F. Rockwell, President of The Pittsburgh Equitable Meter Co.-Merco Nordstrom Valve Co., Pittsburgh, Pa., announced recently the appointment of A. J. Kerr as General Sales Manager for the combined organizations. Mr. Kerr was District Manager of the firm's Midwest headquarters at Tulsa, Okla., prior to his Pittsburgh home office appointment.

A. J. Kerr

This tops a 20-year record with the company. Mr. Kerr was appointed District Manager of the Equitable Meter Co.'s Tulsa office in 1925, prior to the merger of The Pittsburgh Meter Co. and The Equitable Meter Co. in 1926.

He is a member of the American Society of Mechanical Engineers and was recently appointed Manager of the Society for a 3-year term.

In his new capacity Mr. Kerr made the following appointments: M. D. Gilbert as District Manager of the Tulsa office; C. K. Madison as District Manager of the Houston, Texas, office; W. S. Andrews as District Manager of the Pittsburgh, Pa., office.

Also, the company announced, coincident with the amendment to WPB Order L-154 permitting the resumption of manufacture of dometsic size water meters with bronze cases, that their line of Empirs Streeemline Meters has been expanded. Sizes 5/8 inch, 5/8 x 3/4 inch, and 3/4 inch and 1 inch are now available, and orders are being accepted for immediate delivery. With a full 3/4-inch and four-bolt meter and a six-bolt 1-inch meter, the Empire Streeemline design is now available for the complete range of domestic service. All sizes are said to embody the same general construction including a balanced oscillating piston operated within a two-part, snap-joint measuring chamber; an oil enclosed gear train assembled integral with the measuring chamber housing; and unit assembly of all working parts without screws or bolts. A breakable cast-iron bottom plate provides frost protection when upon release it permits all interior castings to separate to relieve parts from the strain and distortion caused by freezing.

Revised literature is available on the complete line of Empire Streeemline meters. Write for Bulletin N-307.

Here are the new water meters with bronze cases recently announced by Pittsburgh - National.

Third "E" Award to Builders-Providence, Inc.

In recognition of the continued effort of its men and women employees, Builders Iron Foundry (Builders-Providence, Inc.), Providence, R. I., prominent manufacturers of instruments for measuring and controlling flow, was recently awarded a third star for its Army-Navy "E" pennant. Builders Iron in 1942 was among the first of the war plants in Rhode Island to be honored by the pennant.

Once . . . . an economy and a convenience

Now . . . . a wartime necessity

Ross Automatic Valves

Surge Relief Valves—

***Protect* distribution systems against excessive pressures.**

***Prevent* over-drafting of a deep well by supplying constant back-pressure.**

Altitude Valves—
Single or double-acting

***Prevent* overflow of tanks, standpipe or reservoirs.**

***Retain* supply on off-peak loads. Make storage available for peak load periods.**

***Control* head during filtering operations.**

Reducing Valves—

***Regulate* pressures in either gravity or direct pressure systems.**

***Regulate* fire-flows between zones of unequal pressure.**

***Regulate* pressure in filter waste lines.**

No distribution system is better than the valves that control it.

Write for literature, catalogs, and details to fit your particular system.

ROSS VALVE MFG. CO., Inc.

P. O. BOX 596 *"Blueprint Now!"* **TROY, N. Y.**

LOCATE UNDERGROUND LEAKS
Without Digging with a
GLOBE GEOPHONE!
(Registered U. S. Patent Office)

A big-paying investment for water, sewerage and public works departments—for any plant with underground water or steam pipes.

Simple to operate . . . Anyone can use it successfully. Does not require engineering skill or any technical knowledge. A mechanical-type instrument. . . . No fragile parts to be serviced and replaced.

Outfit complete with two GEOPHONES, connecting tubes, earphones, in heavy leather carrying case with shoulder straps---------- **$75**

Write at once to

Globe Phone Mfg. Corp. Dept. H Reading, Mass.

PRECALKED

ALL SIZES
2" thru 12"

Lays FASTER at LESS Cost

Lays faster! No lead to melt and pour. The lead and redwood wedges are already securely placed in the pipe bells. To get uniform, leakproof joints all you do is "socket the spigot and calk."

No skilled labor. No slow motion. No wasted man hours. And how that saves time! labor! money! Get all the facts, write!

McWane Cast Iron Pipe Co.
Birmingham 2, Ala.

HIGH QUALITY VALVES HYDRANTS

AND WATERWORKS ACCESSORIES

M & H products, including pipe line accessories, are well known for high quality of material and expert workmanship. They are made according to standard specifications and have been used for many years throughout the country. Write for Catalog No. 34.

M & H VALVE

AND FITTINGS COMPANY

ANNISTON, ALABAMA

These are the original electric liquid level controls, pioneered by us in 1933. They have no floats—no vacuum tubes—no moving parts in the liquid. They control variations of levels of 1/4" or more, and are not affected by pressures, temperatures, acids or caustics. Relay can be located any distance from the electrode.

WRITE FOR CATALOG

CATALOG 943 contains complete technical description of the many types available, together with wiring diagrams for various installations. Get full information on B/W controls. WRITE FOR YOUR COPY TODAY!

B/W CONTROLLER CORPORATION

2206 East Maple Road, Birmingham, Mich.

FIRST IN THE FLOATLESS CONTROL FIELD

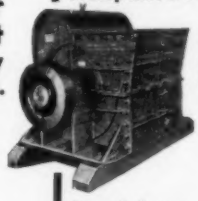
GRUENDLER CRAFTSMANSHIP
Serving Industry over 50 Years

A remarkable Shredder for your Sewage Plant

Showing the way to Sanitary Engineers in many U. S. cities.

Write for DATA and Illustrated BULLETIN No. 0491 on Garbage and Sewage Disposal Equipment

Non-Clog SHREDDER with Tramp metal catcher



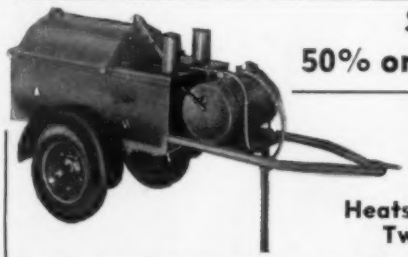
Types & Sizes for Your Needs

Proved features . . . enables complete disintegration of Rag Stock, Garbage, Floatables and Fibrous materials without choke down, so as to pass screen bar—Designed with Spray Flushers, Tramp Iron Catchers and Non Clog Grate Bars.

GRUENDLER

CRUSHER and PULVERIZER CO.

2915-17 North Market St., ST. LOUIS (6), MO.



Saves 50% on Time & Fuel

The Aeroil
HEET-MASTER
Heats Tar & Asphalt Twice As Fast

The "HEET MASTER" will produce as much "hot stuff" as two ordinary type oil-burning kettles of the same capacity. Now obtainable on pneumatics. (Also mud guards at slight extra cost.) Send for FREE Bulletin No. 194AC. For Cut-Back and Emulsion Sprayers, Bulletin No. 190A. Oil-burning Lead and Pipe Compound Melting Furnaces, Bulletin No. 232AC. Portable Oil Burner & Torch Outfits. Bulletin 174A. Asphalt Paving Tools & Accessories, Bulletin 312A. Asphalt Paving Tool Heaters and Asphalt Pavement Heaters, Leaflet 171A.

Aeroil Burner Co., Inc., West New York, N. J.
CHICAGO 16 SAN FRANCISCO 7 DALLAS 1

LEFT TO RIGHT: *Holding the flag—Matthew Porosky, President of the company; Brig. Gen. Norman F. Ramsey, Commandant of Rock Island Arsenal; John W. McAnarney, Vice-President and General Counsel; and Commander James E. Parrott, who presented the award. In the foreground Lt. Col. A. K. Stiles, adjutant of Rock Island Arsenal, pins the "E" pin on Betty Morrissey, employee representative.*

Production Award to Eagle Signal

The employees and management of the Eagle Signal Corp., Moline, Ill., were awarded the Army-Navy "E" recently for outstanding war production. The Eagle Signal Corp., manufacturers of electric signals and traffic control equipment, was congratulated by Secretary of the Navy, James Forrestal, for accomplishing "more than seemed reasonable or possible a year ago."

In addition to the production of electro-mechanical products used in combat and communication services, and for which the "E" was awarded, the organization was able to supply essential and effective traffic signal control equipment for military camps and critical war areas. Many of the techniques acquired in the production of war material have been reflected in the production of traffic signal control equipment.

Lt. Comdr. James E. Parrott, U.S.N., presented the award and told the employees their achievements stood out far above the average. Other Army and Navy speakers emphasized the growth of the corporation.

Lieut. Col. Boyd Bullock Returns to G-E

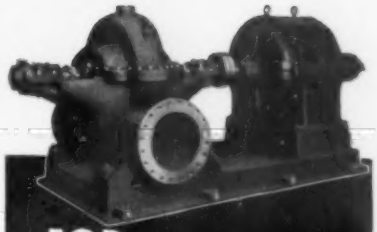
Lt. Col. Boyd Bullock has returned to his prewar position as Advertising Manager of the Appliance and Merchandising Department, General Electric Co., 1285 Boston Ave., Bridgeport 2, Conn.

Lt. Col. Boyd Bullock

In service since February 1942, he was commanding officer of officers' school at Camp Custer, Mich., at the time of his discharge. He entered the army as Major and taught tactics at the Infantry School, Ft. Benning, Ga.

His service record with the General Electric Co. goes back over 20 years. He started in the Publicity Department at Schenectady in the field of market research and analysis, and did promotional work dealing with distribution of catalogs and other publicity material.

Following that he was placed in charge of the company's institutional advertising program. In 1930 he was appointed Division Manager, responsible for advertising products sold to electric service companies. In 1933 he was appointed Assistant to the Manager of the Publicity Department, and later Assistant Manager. In 1939 he became Advertising Manager of the Appliance & Merchandise Department at Bridgeport.



FOR MUNICIPAL WATER SUPPLY

Morris Double-Suction Horizontally-Split Pumps are notable for their high efficiency and dependable, trouble-free operation. Water Department Superintendents of municipalities where these units are used report complete satisfaction with their service. Built in single and multiple stages for all capacities.

Bulletin on request

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Baldwinsville New York

MORRIS
CENTRIFUGAL PUMPS
for municipal services

R.D. COLE QUALITY

TANKS
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BINS
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MARITIME "M" MERIT AWARD

Tank Builders for over 80 Years

R. D. COLE MFG. CO.
Established 1854
NEWNAN, GEORGIA

KWIK-MIX BITUMINOUS NON-TILTING MIXER

An End Discharge mixer for applying cold or hot laid bituminous mixtures to new surfaces, for re-facing and for maintenance. The wide, quick acting discharge gate of the non-tilting drum reduces the time between batches. This light weight, portable unit can be quickly spotted and because of the end discharge advantage, the mixer can be conveniently pulled away from the discharged material. Equipment includes two burners which can be easily removed for controlling temperatures

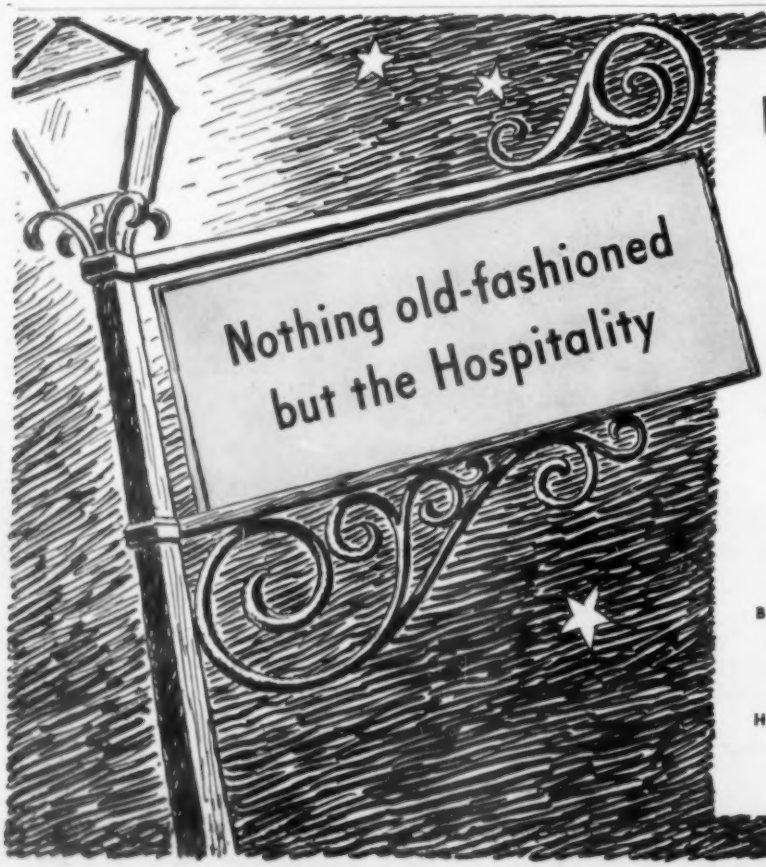
Write for Catalog BAC

KWIK-MIX CONCRETE MIXER CO.
PORT WASHINGTON . . . WISCONSIN

We Welcome the Members of the
NEW ENGLAND WATER WORKS ASSOCIATION
In Convention at the

HIRAM RICKER & SONS
Poland Spring House, POLAND SPRING, MAINE

THE HOME OF WORLD-FAMOUS POLAND WATER



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IF it's *necessary* for you to travel, and if your trips take you to Statler cities, assure yourself of *comfort* and *relaxation* by staying at Statler Hotels.

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OCTOBER, 1944

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Baltimore

Because of war necessity, these engineers of the 14 largest cities of the United States have had to "hold the line" on needed repairs and expansions of the departments under their direction, but as V-day approaches they are working on plans to fill their immediate post-war needs and to provide employment for our demobilized soldiers and war workers during the readjustment period.

(For titles of these 14 engineers, see page 129 of this issue.)

MILTON M. KINSEY
St. Louis

EORGE G. HYLAND
Boston

JOHN D. STEVENSON
Pittsburgh

OL. C. W. KUTZ
shington, D. C.

JOHN I. CASEY
San Francisco

JOSEPH P. SCHWADA
Milwaukee

RICHARD C. WHITE
Buffalo